HOW TO MAKE A CURRICULUM

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HOW TO MAKE A CURRICULUM

BY

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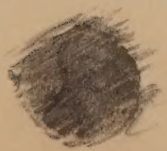
PREFACE

We are here presenting the plan of approach to the problems of curriculum improvement that was employed recently in Los Angeles. It was designed to serve two purposes. The minor one was that inconsiderable amount of revision of current courses which is advisable at any one time. The major purpose was the inauguration of a program of curriculum improvement which will require a generation or more for its consummation. This is not to say that we could foresee the developments of a generation. All that was possible was to take our bearings with the greatest care, conscious of the unreliability of our professional instruments of guidance. It is believed that these are reliable enough to show us the general route to be traveled; and that vision of the exact road will develop as the experience of each step throws its light forward over the next beyond.

Franklin Bobbitt



CONTENTS

I.	Preliminary Survey	1
II.	The Objectives	7
III.	Suggestions relative to Objectives	32
IV.	Pupil Activities and Experiences	44
V.	General Education	63
VI.	Literature and General Reading	76
VII.	The Social Studies	97
VIII.	Natural Science	129
IX.	Mathematics	146
X.	Physical Development and Maintenance	165
XI.	Unspecialized Practical Activities	177
XII.	Unspecialized Practical Arts of Men	199
XIII.	Practical Arts of Women	209
XIV.	Drawing, Design, Visual Art	219
XV.	Music	229
XVI.	English Expression	238
XVII.	Modern Languages	256
XVIII.	Latin	267
XIX.	Administrative Suggestions	280
	Index	287

HOW TO MAKE A CURRICULUM

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CHAPTER I

PRELIMINARY SURVEY

THE engineer who plans the construction of a railroad from Omaha to Los Angeles, let us say, begins his work by taking a general over-view of all the region which lies between. He examines in a general way the lay of the land: the hills, mountains, plains, rivers, valleys, plateaus, passes, slopes, canyons, cities, populated and vacant regions, and the like. On the basis of this preliminary observation, he plans the general route of the line. Laid out on a map of ordinary scale, it will show in about the position where the road will ultimately be. Yet to this point he has not once taken up his surveying instruments for laying out the exact position of the line, its distances, its grades, and its curves. This latter labor is indispensable, but it is a subsequent step. The first step is the broad survey of all of the factors; and the preliminary laying-out of the general line of the route.

To plan the route that a growing man must travel from infancy to the goals of his growth, his culture and his special abilities, is an immeasurably more complicated task than the simple one of planning a thin steel

line across the continent. Within man and in the social world at large there are spiritual mountains, morasses, plains, storm-regions, valleys, deserts, quicksands, and a host of other similar things through the midst of which man's developmental growth-route must lie. And to complicate the matter, the route is not a single line leading to a single goal, but an endlessly complex network of lines leading to a multiplicity of goals.

The first step of the educational engineer is to take a broad over-view of the entire field of man's life by way of seeing the major factors in perspective and in relation. On the basis of this preliminary over-view, he will plan the general educational route to be followed. This general route must be laid out before he is ready to undertake the accurate surveys of the details. It is a far more difficult task than that of the railway engineer because of the intangible, uncertain, and fluctuating character of so many of the factors. The best maps and charts of man's nature and of human affairs that are available are admittedly inaccurate and incomplete. One will, however, use the best that are available; and he will himself have lived the life of man, participated in social affairs and observed widely, so as to know the various matters at first-hand. With all of these helps, in the present state of human and social science, he will move much of the time with a sense of great uncertainty.

And yet the educational engineer cannot evade this first indispensable step of laying out the general route.

However keenly aware of his uncertainties, he must still do the best that is possible, trusting that as the work proceeds he may be able to correct any errors made.

This volume relates to the preliminary step of laying out the general educational routes. One who has had long experience within the field comes to be keenly conscious of his uncertainty relative to innumerable factors. The best statement possible at present on the part of any one can be only probability; and at times nothing more than possibility. Not often, even in the more familiar portions of our field, can there be even relative certainty. While things are here usually stated with positiveness for the sake of definiteness and clearness, yet there can be no present justification for any degree of dogmatism in the statements. They are tentative.

In dealing with difficult professional problems, so long as there is no solution capable of scientific verification, our profession is in a mood to leave the matter in the form of a question. This, of course, is a healthy state of mind for either educational investigator or practitioner. The practitioner, however, cannot act on the basis of questions. He can act only as there is a solution. A tentative solution on the basis of the best evidence available is better for him than a question. He ought, of course, to realize that it is tentative and problematical; but so long as it represents the best solution at which he is able to arrive, it is the safest thing for his purposes.

A second thing we would greatly emphasize. It is that a curriculum-making group should not take its thought second-hand. It should do its own seeing, thinking, judging, and deciding. It should for itself lay out the general routes to be followed by children and youths as they travel their educational journey. As we suggest a general route, therefore, we are in the main merely presenting a pattern of *kinds* of things that ought to be done for itself by each curriculum-making group.

There are numerous educationists at present, mainly scientific investigators, who believe that we can evade this preliminary step of broad general planning of the educational routes. They are certain of a few of the goals to be attained, and of some of the lines to be traveled in achieving them. For example, they are certain that the ability to read, to write, to spell, to compute, to use language grammatically correct, and to perform the specific tasks of one's vocation are proper developmental goals. They believe that the thing to be done now is to take our educational surveying instruments and accurately to locate the exact goals within these fields, and the exact details of the procedure to be employed.

In this latter contention there can be no question as to the validity of their position. For the matters enumerated, in their general outlines, we have been clarifying our professional vision for centuries. We are certain of these goals and reasonably certain of the major lines of procedure to be followed. It is clearly

time for an accurate study of the various factors involved. This is an indispensable second step which must be taken before we can have completed our educational planning. Fortunately, this work is being rapidly carried forward by numerous investigators in all parts of the country.[1]

In spite of the abundance at present of these accurate surveys of the details, this is clearly not yet the major task of educational engineering. While we have located a few of the goals with considerable exactness and some of the roads to their attainment, yet as a matter of fact our profession is exceedingly uncertain as to what most of the goals are; and among these appear to be some of the most important ones. And not knowing the goals, naturally the roads to be traveled have not been, and cannot yet be, located.

The major task of curriculum-making at present is this discovery of the goals in a general way and this planning of the general outlines of the routes. As these matters are defined, one after the other, the obvious ones first and the more elusive ones later, then the accurate analyses can be made for determining the exact details. This second step must await the first.

In the labor of curriculum-making, one may take the short view or the long view. When a school system is confronted with the immediate task of revising its courses of study, it looks not to the far future but to the

[1] Surveys of this character that have been made to date, some fifty-four in number, have been summarized in the valuable volume by Professor W. W. Charters, entitled *Curriculum Construction*. (Macmillan, 1923.)

work which is possible or desirable during the next year or two. On the other hand, viewing the present educational situation in the light of our past history and also in the light of current demands upon education, we can confidently predict a generation-long program of curriculum improvement. This latter will of course be the sum of the many small improvements made year by year as the immediate labors are performed.

In this volume we are looking both to the generation-long process of curriculum advancement and also to the immediate labors of preparing courses of study for next year for any particular school system. We are looking to the long program as guidance for the steps of the short programs. In the nature of the case, the immediate changes in any one year must be relatively small. "Next steps" in man's progress must always be relatively short. But the many short steps make up the long journey. That the short steps of progress be in right directions, it is indispensable that one have the long view of the long journey. In laying out the latter, therefore, so far as we do not go astray, we are making the best provision for taking the immediate short steps.

In suggesting the long view, there is no thought that any one who is really fit for educational leadership will misunderstand and be so foolish as to attempt to go all the way at a single step.

CHAPTER II

THE OBJECTIVES

For a number of years the world has been in a state of unusual unrest. Social currents have been moving in strange, threatening and often disastrous ways. They have carried us far from where we were only a few years ago. And the present speed of change indicates that we have yet far to go.

Because of the social changes, education must shift its ground in fundamental ways. It must perform functions which it has not hitherto attempted; and discontinue labors no longer serviceable.

It is easy to make changes. There are many who delight in any kind of change, and feel that they are making progress when they are making changes. But merely shifting position is not necessarily progress. There are more ways of going wrong than of going right. The *status quo* is usually better than changes in wrong directions. Curriculum-making must find guiding principles which will lead it with all the certainty that is possible in right directions.

It is helpful to begin with the simple assumption, to be accepted literally, that education is to prepare men and women for the activities of every kind which make up, or which ought to make up, well-rounded adult life; that it has no other purpose; that everything should be done with a view to this purpose; and that nothing

should be included which does not serve this purpose.

Education is primarily for adult life, not for child life. Its fundamental responsibility is to prepare for the fifty years of adulthood, not for the twenty years of childhood and youth.

When we know what men and women ought to do along the many lines and levels of human experience, then we shall have before us the things for which they should be trained. The first task is to discover the activities which ought to make up the lives of men and women; and along with these, the abilities and personal qualities necessary for proper performance. These are the educational objectives.

The plan to be employed is activity-analysis. The first step is to analyze the broad range of human experience into major fields. The lines can be drawn in any number of ways. Each curriculum-making group will make the divisions that seem best to it for its purposes. The following is a classification that has been found serviceable:

1. Language activities; social intercommunication.
2. Health activities.
3. Citizenship activities.
4. General social activities — meeting and mingling with others.
5. Spare-time activities, amusements, recreations.
6. Keeping one's self mentally fit — analogous to the health activities of keeping one's self physically fit.
7. Religious activities.
8. Parental activities, the upbringing of children, the maintenance of a proper home life.

9. Unspecialized or non-vocational practical activities.
10. The labors of one's calling.

While the curriculum-maker may desire to analyze the field along entirely different lines, he will be careful to see that his analysis omits no portion of the broad range of desirable human experience. Many matters will be taken care of through the normal processes of living, and without any systematic educational labor. Other matters will be left to non-scholastic agencies. But in the original analyses of human experience, the whole field should be viewed in order that the portions which belong to the schools may be properly seen, within themselves, and in relation to the whole.

The major fields of human action having been defined, the second step is to take them, one after the other, and analyze them into their more specific activities. In this analysis, one will first divide his field into a few rather large units; and then break them up into smaller ones. This process of division will continue until he has found the quite specific activities that are to be performed.[1]

At all stages of the analyses, attention should be fixed upon the *actual activities of mankind.* In part the analyses will be made on the basis of simple observation. This is all that is needed so long as there is virtual unanimity on the part of all objective-minded analysts of the situation. This will largely be the case with the major units, and their larger subdivisions. As the an-

[1] For detailed information relative to these analyses, see Charters, *Curriculum Construction*, chaps. IV–IX.

alyses approach the units that are minute, numerous, and interrelated with each other, and especially when accuracy demands quantitative definition, careful scientific assembling of the facts becomes necessary.

The activities once discovered, one can then see the objectives of education. These latter are the *abilities* to perform in proper ways the activities. The two are cognate, but not identical. For brevity, it is possible to state the two together in the way shown subsequently in this chapter.

In the following list of objectives, the several major fields are divided into their principal subdivisions. We have not here attempted to go into the more minute subdivisions. We have held, in the main, to those which represent the practically unanimous judgment of some twenty-seven hundred well-trained and experienced adults. In a number of cases, however, where the field is complex or obscure, the items represent only majority approval. They are still upon the level of hypothesis and require further study and analysis. They are attempts to define regions of fields which we know exist, but the details of which are yet obscure. We cannot ignore these regions simply because our knowledge of them is incomplete. We must define them as best we can for working purposes; and then further clarify our vision through the two methods of scientific research and of dealing practically with them. It is well to have a proportioned vision of the whole field even though many spots be obscure and problematical.

The following [1] is presented merely to illustrate the *kind* of statement of objectives that appears to be needed — on this particular level of generality. The curriculum-making group will formulate its own statement on the basis of its understanding of the realities.

Major Objectives of Education

I. Social Intercommunication

1. Ability to use language in all ways required for proper and effective participation in the community life.
2. Ability effectively to organize and present orally one's thought to others: (*a*) In conversation; (*b*) In recounting one's experiences; (*c*) In more serious or formal discussion; (*d*) In oral report; (*e*) In giving directions; (*f*) To an audience.
3. Ability to pronounce one's words properly.
4. Ability in speech to use the voice in ways both agreeable and effective.
5. Command over an adequate reading, speaking and writing vocabulary.
6. Ability to use language which is grammatically correct.
7. Ability effectively to organize and express one's thought

[1] This statement of objectives has grown up gradually through twelve years of coöperative effort on the part of some fifteen hundred members of graduate classes in "The Curriculum" conducted by the writer at the University of Chicago. Recently the list was critically examined by some twelve hundred high-school teachers in Los Angeles, and again revised. It was then used as a basis for determining the objectives of the several junior and senior high-school departments in the recent curriculum labors in that city. It is still, of course, but a tentative draft. It will require revision and re-revision on the basis of accurate scientific analyses of detailed portions of the field as these accumulate. Or it may be entirely discarded in favor of a different plan, should a more serviceable one be offered.

in written form: (*a*) Memoranda; (*b*) Letters; (*c*) Reports, news items or articles, systematic discussion of questions; (*d*) Giving directions; (*e*) Written addresses.

8. Ability to write with proper legibility, ease, and speed.

9. Ability to spell the words of one's writing vocabulary.

10. Ability to use good form, order, and arrangement in all of one's written work: margins, spacing, alignment, paragraphing, capitalization, punctuation, syllabication, abbreviation, etc.

11. Ability to understand the oral expression of others.

12. Ability to read the written or printed expression of others with proper ease, speed, and comprehension.

13. Ability to use dictionary, encyclopædia, atlas, handbooks, card catalogues, reader's guides, indexes, and other library and reference helps in finding facts or materials wanted.

14. Ability to read and interpret facts expressed by commonly used types of graphs, diagrams, and statistical tables.

15. Ability to express facts by means of graphs, diagrams, and statistical tables.

16. Ability to use maps with ease and understanding.

17. Ability to read drawings, and to prepare simple drawings or designs.

II. Maintenance of Physical Efficency

101. Ability to control one's dietary in such ways as to make one's food contribute in maximum measure to one's physical well-being.

102. Ability to keep the body mechanism properly oxygenated.

103. Ability to utilize muscular exercise as a lifelong means of maintaining a high level of physical vitality.

104. Ability and disposition throughout life to engage with

pleasure and profit in a varied repertory of games, sports, athletics, outdoor recreations, etc., such as swimming, skating, hiking, rowing, riding, tennis, golf, ball games of various kinds, running games, dancing, fishing, hunting, canoeing, motoring, camping, athletic events, etc.

105. Ability and disposition to engage in a variety of unspecialized practical labors which contribute to one's repertory of physical experiences.

106. Ability to employ setting-up exercises for corrective or emergency purposes when nothing better is available.

107. Ability to carry one's self and to move and act with ease, grace, and precision.

108. Ability to maintain postures conducive to the best physical functioning.

109. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical functioning.

110. Ability to make one's sleep contribute in maximum measure to the development and maintenance of a high level of physical vitality.

111. Ability to relax physically and mentally at proper times and in proper ways.

112. Ability to protect one's self from micro-organisms; and to deal with them and their products effectively in case of attack.

113. Ability to take proper precautions against the spread of disease.

114. Ability to protect from dust, smoke, and noxious gases.

115. Ability rightly to control the factors involved in the maintenance of body temperatures.

116. Ability to dress in ways that promote the physical well-being in maximum degree.

117. Ability and disposition to maintain personal cleanliness.

118. Ability to provide the most favorable conditions for the elimination from the tissues, organs, and body in general of all harmful or needless substances and agents.

119. Ability to control one's relations to sunlight so as to secure maximum benefits therefrom.

120. Ability to secure that variety or diversity of physical experiences necessary for maximum well-being.

121. Ability to draw up an individual program of work, play, rest, sleep, meals, etc., best suited to one's physical nature and capacity.

122. Ability to avoid preventable accidents.

123. Ability to deal with conditions produced by many kinds of common accidents.

124. Ability to care for the teeth.

125. Ability to care for the eyes.

126. Ability to care for nose, ear, and throat.

127. Ability to care for the skin.

128. Ability to keep the heart and blood vessels in normal working condition.

129. Ability to care for the hair and scalp.

130. Ability to care for the nails.

131. Ability to care properly for the feet.

132. Ability to control sex-functions in the interests of physical and social well-being.

133. The ability to keep reasonably well-informed, in the degree to be expected of the layman, as to the discoveries of science in the fields of health conservation and promotion.

134. Ability alone or in coöperation with physicians and nurses to deal effectively with many kinds of disorders.

135. Ability to care for the sick, — so far as laymen need this ability.

136. Ability to take the protective, precautionary, or remedial steps necessary to protect one's self or family from common ailments.

137. Ability wisely to utilize the services of physicians, nurses, dentists, and other specialists in health and physical upbuilding and maintenance.

138. Ability within one's occupational field to coöperate effectively in providing wholesome working conditions.

139. Ability to perform one's civic functions in coöperating with and in the social support and control of public agencies engaged in promoting the general physical welfare.

III. Efficient Citizenship

201. Ability to think, feel, act, and react as an efficient, intelligent, sympathetic, and loyal member of the large social group — that group that is prior to differentiation and within which social differentiation occurs. Large-group or citizenship consciousness. Sense of membership in the total social group, rather than in some special class. Large-group local consciousness when dealing with local problems; large-group state consciousness when dealing with state responsibilities; large-group national consciousness when dealing with national matters; large-group world-consciousness when dealing with mankind's responsibilities for world cooperation and management.

202. Ability and disposition to view the specialized or functional groups and agencies, not as independent entities, but as service arms of the general social whole, without which they could not exist.

203. The ability of the citizen to do his individual share in performing those social functions for which all citizens are equally responsible in the establishment, organization, maintenance, protection, oversight, and control of the specialized groups and agencies into which society is differentiated for effectiveness of action. The young citizen-in-training is to acquire those abilities

which, when adulthood is reached, will enable him to perform the following things in connection with the several specialized social agencies:

(*a*) Sharing fully in an informed and impelling public opinion, which looks to the general welfare in its control of each service agency.

(*b*) Setting up in public opinion and maintaining the standards of result to be achieved by each service agency.

(*c*) Seeing that each service agency aims at the standards of results to be achieved.

(*d*) Seeing that the service agency employs procedures which are effective in producing the desired results and which are economical in social costs.

(*e*) Seeing that the material working conditions necessary for the most effective and economical procedures are supplied.

(*f*) Seeing that each service agency is provided with personnel and organization of the kind required by the procedures to be employed; and properly rewarded.

(*g*) Directly or indirectly selecting or approving the selection of the personnel of the agency.

(*h*) Supplying the funds necessary for the efficient, and in all ways proper, conduct of the agency.

(*i*) Currently or periodically examining, directly or through publicity reports, or both, into the results achieved by the agency, and the degree of economy employed.

(*j*) Where results achieved and degree of economy employed comply with standards of expectation, approving and properly rewarding the labors of those who have thus given good service.

(*k*) Where results do not reach the standards of expectation, or where there has been waste, finding the causes of the deficiency, and removing them as expeditiously as practicable.

204. Ability to organize and use social facts effectively in arriving at conclusions.

205. The ability to use general principles in analyzing and considering economic, political, and other social problems.

206. Ability to protect one's self from social, economic, and political fallacies, illusions, misrepresentations, petty-mindedness, fragmentary-mindedness, sentimentality, selfish prejudices, and the like, through one's continual reliance upon facts and principles.

207. Ability to discern the character and the extent of one's social obligations and duties in the amount and character of things done for one by other individuals, groups and agencies.

208. Ability to discern one's individual rights in the quantity of one's services to the general group. (Ability to read one's rights as things earned.)

209. Ability to see social relations so clearly as to discern the *duties* of others, individuals and groups, within the social whole.

210. Ability to see social relations so clearly as to discern the *rights* of others within the social whole.

211. Disposition of the citizen as consumer to avoid waste.

212. A sufficient knowledge of the laws which one is expected to obey.

213. An understanding and appreciation of the social-service labors and sacrifices which have brought our institutions and social procedures to their present high levels of development.

214. Ability to organize and express one's ideas clearly and effectively in the discussion, formal or informal, of social problems.

215. Ability wisely to choose a specialized occupation in which one can give good service to one's self, to one's family, and to society.

IV. General Social Contacts and Relationships

301. Ability and disposition to talk and act in those sympathetic, tactful, and human ways that are both most agreeable and also most effective in the conduct of one's relations with one's associates; and conversely, to avoid the many things disagreeable to others.

302. Ability to comply automatically and relatively unconsciously with those ordinary social forms and conventions which facilitate human association.

303. Ability to associate easily and naturally with individuals of diverse ages, interests and specialties.

304. Ability and disposition to make a wise choice of companions; and ability to develop and maintain friendship with people of high character and of diverse natures, activities, and interests.

305. Sincerity, honesty, straightforwardness, truthfulness, fair-dealing, steadfastness, and dependableness in one's dealings with others.

306. Ability to discern the motives which actuate human behavior.

307. Ability to discern the unspoken expectations of others.

308. Ability to sense and evaluate the reactions of others.

309. Ability to gain the confidence of those with whom one comes in contact.

310. Ability in dress and otherwise to maintain a proper personal appearance.

311. Ability to create and maintain a homelike and hospitable atmosphere about the place in which one lives.

312. Ability to converse agreeably and effectively upon a variety of topics and in a mood and manner suitable to the situation.

V. Leisure Occupations

401. Ability, disposition, and habit of diversified *observation*

of men, things, and affairs as an enjoyable and fruitful leisure occupation.

402. Ability, disposition, and habit of abundant and diversified *reading* as a means of enjoyable and fruitful *indirect observation* of men, things, and affairs; of *vicarious participation* in those affairs; and of entering into the thoughts and moods of others.

403. Ability profitably to utilize pictures, and other visual modes of representation as means of *indirect observation* of men, things, and affairs.

404. Ability to utilize the drama, spoken and silent, as a means of enjoyable and fruitful *indirect observation* of men, things, and affairs.

405. Ability to utilize conversation as a profitable and enjoyable means of participating in the thought of the world.

406. Ability and disposition to give expression to one's thoughts and experiences in proper ways and under proper circumstances.

407. Ability in quiet thought to turn over in mind, evaluate, organize, and assimilate one's experiences.

408. Ability to participate in the more formal public discussion of matters of current interest as an enjoyable and fruitful spare-time occupation.

409. Ability and disposition to utilize public addresses, lectures, etc., as means of widening one's thought by entering into the thoughts and experiences of others.

410. Ability, disposition, and habit of taking up occasionally the systematic study of some new thing; and of exploring untried fields of human experience.

411. A disposition toward experimentation, exploration, discovery, and invention in those fields of one's activities and interests which permit initiative.

412. Ability profitably to utilize the participative and observational opportunities of travel.

413. Ability to utilize music for a healthful, abundant, and varied awakening of one's emotional nature.

414. Ability to utilize the products of the visual arts as sources of enjoyable and profitable æsthetic experiences.

415. Amateur ability in fields of the fine arts.

416. Ability to participate in desirable activities of social clubs.

417. Ability to entertain one's friends, and to respond to entertainment by one's friends.

418. Ability to carry on in proper ways one's family and general social correspondence.

419. Ability and disposition to engage with pleasure and profit in a sufficient and varied repertory of games, sports, athletics, and outdoor recreations, such as swimming, skating, hiking, rowing, riding, tennis, golf, ball games of various kinds, running games, dancing, fishing, hunting, canoeing, motoring, camping, athletic events and other things physically and socially equivalent.

420. Ability and disposition to utilize outdoor life in the midst of natural surroundings as recreation for mind and body.

421. Ability and disposition to participate in a variety of unspecialized practical activities as enjoyable and fruitful spare-time occupations.

422. Ability to draw up for one's self and hold to a balanced program of desirable leisure occupations.

VI. General Mental Efficiency

501. A proportioned and emotionalized intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:
   (*a*) Man; human nature; diversities of human nature.
   (*b*) Man's activities and affairs in their diverse fields and forms.
   (*c*) Man's institutions.
   (*d*) The territorial or regional groups that make up the local community, the state, the nation, the world. Their situations and affairs.

(*e*) The specialized or functional groups — economic, political, religious, and the like — together with their special situations, activities, duties, rights, and relationships.

(*f*) Man's geographical habitat.

(*g*) The development of man and of his nature, habitat, institutions, manners and customs, specialized groupings, etc., as revealed in biology and history.

(*h*) The world of plant life.

(*i*) The world of animal life.

(*j*) The world of chemical phenomena.

(*k*) The world of physical phenomena.

(*l*) The geological world.

(*m*) The astronomical world.

(*n*) The world of number, quantity, magnitude.

(*o*) The world of sound and music.

(*p*) The world of language and literature.

(*q*) The world of form, color, visual art.

(*r*) Man's inventions and creations.

(*s*) The world in composite forms: woods, hills, streams, lakes, oceans, farms, cities, and the like.

(*t*) The world of myth, legend, folklore, fairy tale — realities of a sort even though they are but created in man's imagination.

In each field: awakened interests; tendencies to attention; appreciations; normal emotional reactions.

502. Ability effectively to perform the mental activities involved in the proper exercise of the many specific functions which one should perform. Some of the mental states and activities needed for *any* specific ability are as follows:

(1–a) An *interest* in the things involved in the exercise of the specific ability: the materials, forces, processes, relations, experiences, and results.

(2–a) Automatic *watchfulness* or attention to the things involved.

(3–a) Right *valuations*, *attitudes*, and *appreciations* of things involved.

(4–a) *Desire for the results* which come from an exercise of the ability.

(5–a) *Delight* in the experiences involved in the exercise of the ability.

(6–a) *Desire for the activity* for the sake of the experiences, the results, or both.

(7–a) Normal and healthy *emotional responses* to the things, situations, and experiences involved in the exercise of the ability.

(8–a) The specific *habits and skills* which are necessary for easy and effective performance of the activities.

(9–a) *Self-direction* and *self-control* in performing specific activities.

(10–a) *Habits of planning* action prior to execution.

(11–a) *Knowledge* of the things involved. Command over the science required in the efficient exercise of the ability — both the general or background science and the specific applied science.

(12–a) Interest in and right attitudes toward the science which should always guide planning and execution.

(13–a) Disposition to follow the dictates of science both in planning and in execution.

(14–a) Confidence in the guidance of science. Automatic habit of turning to science when seeking guidance.

(15–a) Ability to analyze a situation into its several elements or factors and to see them in proportion and relation.

(16–a) Power to foresee developments and results.

(17–a) *Resourcefulness* in meeting unexpected situations. Ability to analyze perplexing situations into their elements by way of resolving the difficulties.

(18–a) Habit of keeping abreast of developments. Openness of mind toward new developments, discoveries, or inventions.

(19–a) Ability to collect, organize, and interpret facts needed in the exercise of each ability; and to arrive at conclusions justified by the evidence.

(20–a) Knowledge of, and habit of using, methods which are most economical in time, labor, and cost.

(21–a) Habit of *accuracy* in thought and execution.

(22–a) Ability to do one's thinking in quantitative terms where this is necessary for accuracy. Skill in handling the quantitative or mathematical matters involved.

(23–a) A valuation and habit of system and order in dealing with the several factors.

(24–a) A sense of the reality or substantiality of the things, forces, processes, and relations that are involved.

(25–a) Ability to use language efficiently as the vehicle of one's thought.

(26–a) Habit of thinking primarily in terms of the realities concerned — with the verbal element properly subordinated.

(27–a) *Sense of responsibility* for doing adequately, promptly, and cheerfully everything that needs to be done.

(28–a) Valuation of *high standards* of achievement. Habits of holding to high standards. Disposition always to do one's best.

(29–a) *Ability to self-judge* the character of one's performance, and of the results, in terms of appropriate principles and standards.

(30–a) An active dislike of things faulty when measured by proper standards.

(31–a) Ability to recognize defects, errors, or shortcomings in conditions, processes, or results.

(32–a) Knowledge of the kinds of errors against which one should be on guard.

(33–a) Knowledge of the harmful effects of mistakes.

(34–a) An effective desire to avoid errors or shortcomings.

(35–a) Habit of watchfulness against errors or shortcomings.

(36–a) Disposition to permit no exceptions to right procedure.

(37–a) Habit of correcting errors as soon as discovered.

(38–a) An awakened conscience, so to speak, relative to rightness and wrongness in the matters involved in the exercise of each ability.

(39–a) An abiding and impelling confidence in the worth of one's labors.

(40–a) Disposition to be active.

(41–a) A disposition to be as vigorous and prompt as the nature of the situation makes desirable.

(42–a) *Willingness to exert one's self* as fully as needful, to take trouble, to endure pain, to sacrifice the immediate for the remote, the lower for the higher, as far as the situation demands these things.

(43–a) Tenacity of purpose, persistence, industry, and courage in grappling with obstacles and in achieving the desired results.

(44–a) Confidence in one's ability to perform the activities.

(45–a) Sense of dissatisfaction or disappointment when one fails.

(46–a) Knowledge of and respect for the expectations and standards of cultivated right-minded persons. A proper degree of sensitiveness to the expectations of such persons, and tendencies to react accordingly.

(47–a) The ability, in tasks requiring group effort, to coöperate fully with one's associates.

(48–a) Such knowledge of one's abilities in relation to

the tasks that one can know whether he is justified in doing things himself or in getting them done by those who are more specialized and more skilled than one's self.

(49-a) The ability to keep one's emotional serenity, in the face of circumstances however trying.

503. Ability and disposition throughout life, according to one's native capacity, to engage with pleasure and profit in a varied repertory of intellectual, social, and æsthetic activities of play type for the sake of maintenance of one's mental integrity and virility. (See Leisure Occupations.)

504. Disposition and habit of utilizing one's unspecialized work activites as a means of mental maintenance. (See Unspecialized Practical Activities.)

505. Disposition and habit of utilizing one's civic activities as opportunities and means of maintaining one's general mental powers.

506. Ability to lay out for one's self and hold to a program of experiences which, considering all circumstances and conditions, promises maximum benefits in the development and maintenance of one's mental powers.

507. Ability to see and judge one's own abilities, capacities, aptitudes, strengths, weaknesses, shortcomings, etc.

508. Ability to judge one's degree of fitness for the many possible specialized occupations; and for the several levels of proficiency in each.

509. Ability to take the protective, precautionary, or remedial steps necessary to protect one's self or family from the various causes of needless mental inefficiency or disability.

VII. Religious Attitudes and Activities

601. A sense of the brotherhood of man. A full sense of membership in the large or total social group. Large-group consciousness. A sense of human interdependency, of community of nature, of origin, of vicissitudes,

and of destiny. Tendencies to action and reaction which are inherent in the large-group consciousness.

602. Ability to see one's environment, the near and the far, the personal and the impersonal, *sub specie æternitatis*, as a vast and restless sea of forces and phenomena, infinite in extent, subtlety, and complexity. Ability to see and realize one's inter-relatedness with and within this boundless environment. (The vision provided by science — physical, biological, psychological, social.)

603. Ability to catch for one's self such glimpses as are permitted to finite vision of the Being which actuates the universe as revealed in natural manifestations, in living creatures, in mankind, in man's highest examples, in the record of man's thought and action and aspiration as presented in history, literature, art, science, philosophy, and in man's religious literatures.

604. Ability to participate as fully and abundantly as one's original nature will permit in religious and philosophic thought of the type characteristic of man at his best and highest.

605. Ability, habit, and disposition to follow the leadership of the world's Men of Vision.

606. An attitude and desire of obedience to the immutable and eternal laws which appear to exist in the nature of things. Confidence in the beneficence of these laws.

607. A sense of personal security which springs from one's confidence in the beneficence of the general order of things.

VIII. Parental Responsibilities

701. The physical qualities necessary for parenthood of desirable type. (Duplicate.)

702. The mental, moral, and social qualities necessary for parenthood of proper character. (Duplicate.)

703. Ability to supply the material needs of one's children. (Duplicate.)

704. Ability to read, as fully as conditions permit, the potential characteristics and abilities of one's children.

705. Ability to particularize the abilities and personal characteristics which should be aimed at in the upbringing of one's children.

706. Ability to do one's share in coöperatively getting the particularized objectives of the training of their children determined by specialized agencies; particularly the schools.

707. Ability to judge, and in some part to initiate, the choice of the experiences which their children should have in order to attain the characteristics and abilities proper for them.

708. Ability to do one's share in getting specialized agencies to determine the child-experiences best for attaining the goals of achievement.

709. Ability to judge, and in some part independently to choose, the material opportunities and conditions to be provided the children for their experiences.

710. Ability to provide the material conditions of the desirable child-experiences through unspecialized labors so far as it is desirable to provide them in this way.

711. Ability to do one's share in coöperatively getting the material conditions of the desirable child-experiences effectively provided by specialized agencies; particularly, the schools.

712. Ability to evaluate personal, social, and moral influences of different kinds as to their efficacy in the right upbringing of children.

713. Ability to provide the proper parental share of the personal, social, and moral influences necessary to the right upbringing of children.

714. Ability to control the children's contacts with the general life of the community, juvenile and adult, in the interests of the children's right upbringing.

715. Ability to do one's share in coöperatively getting a proper portion of the personal and social factors of their children's experiences provided by specialized agencies; particularly the schools.

716. Ability to judge of their degree of success in carrying their children's development forward toward the predetermined goals of achievement.

717. Ability to judge the degree of success of specialized agencies, particularly the schools, in assisting their children to achieve the goals of their upbringing.

718. Ability to do one's individual share in the coöperative support and control of specialized agencies to which child-training functions are delegated. (Duplicate: Civic.)

IX. Unspecialized Practical Activities

801. Ability to use all common kinds of measuring devices: measures of lengths, area, volume, capacity, weight, time, value, temperature, specific gravity, etc.

802. Ability to sharpen, adjust, clean, lubricate, replace worn or broken parts, and otherwise keep household and garden tools and appliances in good order and good working condition.

803. Ability to make repairs, adjustments and additions to the house and its equipment.

804. Ability to make repairs, adjustments, and sometimes to construct household furniture or other equipment.

805. Ability to participate intelligently in the original planning of one's home.

806. Ability to operate household equipment.

807. Ability to keep the house, premises, and equipment clean and sanitary.

808. Ability to keep the house in good order.

809. Ability to care for and operate the electrical system and

appliances in one's home; and to make simple repairs, adjustments, or replacements.

810. Ability to protect the home from fire.

811. Ability to perform the operations involved in the care of the premises and garden.

812. Ability to care for pets or other live animals.

813. Ability to perform the various activities involved in traveling and outdoor life.

814. Ability wisely to select garments.

815. Ability to design, select the materials, make, mend and alter clothing.

816. Ability to care for one's clothing.

817. Ability to perform the laundry and other cleaning activities of the home.

818. Ability to perform the various activities involved in providing the family with food.

819. Ability to perform the several activities involved in a proper care of the person.

820. An amateur ability to do productive, creative, or interpretative work in the field of the fine arts. (Semi-specialized.)

821. Ability to perform the simple business operations involved in the conduct of personal and family affairs.

X. Occupational Activities

We cannot here present a list of the occupational abilities. There are hundreds, even thousands, of specialized occupations and for each a separate list of abilities must be formulated. For discovering these, each occupation must be analyzed separately into its activities.

We place the general topic here for the sake of completeness. For any individual, the total list of his educational objectives will be those of the foregoing nine lists *plus* those of the specific occupation which he intends to enter. The nine fields constitute his *general* training; this last, his *specialized* training.

Objectives of Schools of Different Levels

So far as valid, leaving aside the vocational, the foregoing are the objectives of general education in schools of all levels: pre-primary, primary, elementary, junior high school, senior high school, and junior college. All of these schools are training for the same adult life. All are aiming at the same ultimate goals. Some are nearer the beginnings of man's educational journey, some are nearer its consummation. All the parts, however, make up *one* journey. It should be direct, consistent, straight, unconfused.

The Ingredients of any Specific Ability

What is an ability? In most or all cases an ability appears to be a complex thing, composed of many ingredients. Take, for example, the ability to use language which is grammatically correct. This ability involves certain habits, skills, valuations, attitudes, desires, knowledge, sensitiveness to the expectations and criticisms of others, watchfulness over one's language, ability to self-judge, dislike for grammatically incorrect language, a feeling for right and wrong forms, an interest in language matters, and doubtless many others, — all referring specifically to one's use of language.

No one of these factors alone is sufficient to produce correct English. The ability to use correct English is operative only when there is a simultaneous working of all of them. To develop the ability involves the development of each and all of the specific factors.

Space does not permit us here to take one by one each of the several score specific abilities presented above, and to enumerate the elements which compose it. There is enough similarity, however, in the *types* of ingredients of the several abilities to permit the use of a series of types of component factors. Such a series we have presented above under item 502. It is numbered in a special way, 1–a to 49–a, to facilitate its being used for the special purpose here indicated. If one will take that list in connection with any one of the specific abilities and reword the list in terms of that ability, he will have a statement of its component elements.

Since the abilities are of diverse character and value, and the list of component type-elements general enough in statement to cover all of them, naturally the educationist must use ordinary judgment in rewording the statements according to the character and value of the several abilities. A merely mechanical use of the device in so complex a field merely reduces the matter to an absurdity. The rewording must be carefully fitted to the realities.

CHAPTER III

SUGGESTIONS RELATIVE TO THE OBJECTIVES

THE first step in curriculum-making is to decide what specific educational results are to be produced.

The results to be produced should be stated in human terms. Most of them are human abilities of one kind or another. Operating within these as factors are personal qualities and characteristics of many kinds.

The objectives should be stated in definite terms. When so stated, it is possible for educationists to know with certainty at what they are aiming. It is also possible for parents and students to understand.

The objectives should be stated, so far as their nature will permit, in the everyday language of common sense. They should be easily intelligible to everybody concerned, especially to parents and pupils.

General unanalyzed objectives are to be avoided. For the ten major divisions of human action, it would be possible to state ten corresponding abilities. These would be so general as to be practically useless for curriculum-making. "Ability to care for one's health," for example, is too general to be useful. It must be reduced to particularity: ability to manage the ventilation of one's sleeping-room, ability to protect one's self against micro-organisms, ability to care for the teeth, and so on.

Objectives that are only vague high-sounding hopes

and aspirations are to be avoided. Examples are: "Character building," the "harmonious development of the individual," "social efficiency," "general discipline," "self-realization," "culture," and the like. All of these are valid enough; but too cloud-like for guiding practical procedure. They belong to the visionary adolescence of our profession, not to its sober and somewhat disillusioned maturity.

5 Every school system should formulate its own statement of its objectives. If it seems desirable, the foregoing lists can be used as starting points. Eliminate what is not approved. Modify what is partially approved. Include what has been omitted.

In certain portions of the field careful, sometimes scientific, activity-analyses have been made. Most of these are in fields of spelling, language and grammar, arithmetic, history, geography, and vocations. Many of these can, and should, be used for suggestion.[1] Except for a few such analyses, however, they are too incomplete and tentative to be of service for actual guidance. In large measure they are nothing more than promising experiments in the technique of activity-analysis. But even so, they provide numerous practical suggestions, and should be used for all that they are worth.

It is unfortunate that so little scientific analysis has yet been possible in most fields of human action. Nobody knows with definiteness, for example, what

[1] The curriculum-maker can find a summary of them, and references to the originals, in Charters's *Curriculum Construction.*

specific things the good citizen should do. Little scientific analysis of civic activities has yet been made. In matters of personal hygiene, our knowledge is somewhat more complete; but there are no authoritative analyses of community health activities which can be accepted for guidance in listing objectives of health education. Recreational analyses have not been made. We do not know accurately what specific activities parents should perform in the upbringing of children; or what activities should make up the religious life; or the field of unspecialized practical arts.

While we recognize the desirability of using scientific method, we must admit that as yet we lack a technique which is adequate for the satisfactory analysis of any one of the ten fields; and that trained investigators are not yet available for doing the work.

Until such time as the objectives can be scientifically established, practical workers will employ less rigorous methods in formulating their working objectives. As a matter of fact, innumerable things are proved by practical experience. Take, for example, the *ability to read.* No scientific study has been made which proves that this is a needed human ability. But practical experience has proved it with finality. And what is thus proved takes its place as scientific verity. One does not employ the refined methods of research to demonstrate the obvious.

In the same way, practical experience has demonstrated the need of other human abilities and characteristics. In the foregoing chapter, we have attempted

only to assemble results of practical experience on the basis of the testimony of some twenty-seven hundred mature and cultivated individuals.

We should use the exact methods of science to discover what is proved by practical experience where *there is any doubt of the matter*; also to be sure that vital matters are not omitted by oversight; and finally to introduce the quantitative element when standards of achievement are to be definite.

Some abilities are so simple and natural that they can be taken care of through the general processes of living: ability to walk, to run, to talk, to listen to others, to operate the electric lights, and the like. The unfoldment of these abilities is a portion of one's total education, but is not an objective of one's school education. All education should proceed upon the assumption that *nothing should be done by the schools that can be sufficiently well accomplished through the normal processes of living*. Only those abilities which are so complex that they are not sufficiently developed through the normal processes of living will be included among the objectives of systematic education.

In locating the objectives that require special emphases, especially in general education, the diagnostic method of discovering the personal and social shortcomings to be overcome is most fruitful. Let one discover the mistakes commonly made in English expression, and these will point to the aspects of the English training that are to be specially emphasized. Find health errors that are common, and one

can discover the health abilities that will prevent these errors. Locate civic deficiencies in the adult world, and they point to the attitudes, powers of judgment, habits, and other civic matters to be emphasized. The recreational shortcomings of our population show the kinds of preventive and protective training needed. The principle extends to all aspects of education. Errors do not show what one ought to do; but they show where emphases are to be placed in bringing one to do the things which activity-analyses show that he ought to do.

Certain attitudes, characteristics, and abilities cannot be made the objectives of public education because the community is too much divided. This is notably true of the objectives of religious education. It is equally true of some of the objectives of civic and economic education. And we find also divisions of community sentiment in training for health, recreations, parenthood, vocation — in fact, in about all fields of practical action. It is clear that a long period of community discussion and education will be necessary before there can be developed sufficient community support for any complete or fully rounded program of education.

Certain abilities are precluded by practical conditions. The ability to swim, for example, cannot be an objective where the schools lack swimming facilities. The ability to participate in an orchestra is precluded where the school cannot secure instruments or teacher, and where there are not enough students

to warrant it. The ability to write shorthand cannot be an objective in a very small school which cannot afford the necessary special teacher. The objectives actually set up by any school or system must largely be determined by such practical considerations.

The comprehensive working list of abilities should be put into printed form. This makes them definite. It prevents their becoming confused and changed through processes of discussion. It enables all concerned to have the same things before them and the same things in mind at once. It enables one to see the entire range of abilities as he considers any one of them or any group of them. It assists in seeing each in relation to all. It prevents losing sight of any of them. It assists in providing a broad common ground of understanding for all concerned.

The printed working list of abilities should be distributed to all who bear responsibility for education. These are, in the first instance, the parents and lay community in general. These bear the primary responsibility for education. The responsibility rests in secondary or derived fashion upon the professional organization. The list of abilities should be considered by all who bear responsibility.

The educational profession should lead in formulating this comprehensive list of abilities. It has been commissioned to develop them in human beings. It ought therefore to have specialized skill in seeing them within individuals and as they operate in human society.

While educationists will, of course, lead, it is probable that the general community should assist in determining the several abilities which are to be developed within the younger generation. It is they who make up the world of practical affairs and who perform the several activities. They are acquainted with the abilities at first-hand. Let us admit that their knowledge is often superficial and fragmentary and that it relates to types of performance which are often crude and primitive. In spite of these things, as a matter of fact, it is those who are specially proficient in the practical affairs of the world who can best reveal to our profession what the abilities are which ought to be generally developed. The actual abilities at their best show us what they ought to be. And these things at their best are to be found here and there within the community life. Those who possess the abilities are specially competent to pass judgment upon the formulations of the professional analysts; and to take the lead in bringing the entire community to an appreciation of the objectives.

Specialized groups within the community should be held responsible for specially expert services in locating the abilities involved in those portions of the field with which they have to do. This is especially clear in locating the vocational abilities. Salesmen and supervisors of salesmen are specially competent in pointing out the abilities which are needed by salesmen. Printers are specially competent to point out the abilities which are needed by successful printers.

The principle applies also outside of the vocational

field. Physicians and nurses possess specialized ability to assist in formulating the objectives of health education. Civic and social workers ought to be able to provide specialized assistance in formulating civic objectives. Religious workers ought to be able to advise with reference to desirable religious attitudes, habits, characteristics, and abilities. Specialists in the field of recreational agencies should advise relative to desirable abilities in these fields. The educational profession should utilize experience wherever it can be found.

In this connection of course one will remember that the layman often tends to be dogmatic, dictatorial, and intolerant, especially when he feels himself impelled by religious, patriotic, vocational, political, or other crystallized social sanctions. These are the usual symptoms of social ignorance and unfamiliarity with civic responsibilities and procedures. Enlightenment, through civic functioning under good leadership, is the cure.

Out of considerations by all concerned, decision should be reached relative to the abilities which are to be left to the general processes of living; those which are to be left to the systematic care of homes, churches, recreational and other agencies; and the ones which are to be made the responsibilities of the schools.

The comprehensive list of abilities should be determined wholly without reference to subjects or departments. It should present simply the characteristics and abilities needed by men and women. At a later stage, subjects will be considered. But at this stage,

the curriculum-maker should remain oblivious to them. Attention should be fixed on man, his affairs, his powers.

This does not mean that the services of the specialized educational departments are not to be employed. As a matter of fact, the services of every type of specialist should be fully utilized. The art department in the schools, for example, will be able to discern certain aspects of need on the part of the general adult community which cannot be so clearly discerned by any other group. The department of physical training ought to be specially proficient in discerning the physical needs of the population; the department of home economics, the needs of housewives; the social studies department, the civic needs of the citizen. Ultimate decision, however, relative to any proposed objective is not to be made by any special department; but by those who bear the general educational responsibility.

The abilities are to be determined on the basis of human needs without reference to the place or time of doing the work of developing them.

Each school system should formulate its own objectives. It is probable that before long we shall have a generally acceptable professional statement of specific educational objectives. When that time comes, the local labors can be greatly lightened. To date, however, no city has gone far enough to provide a sufficient model for any other. For the sake of sound professional progress, it is good that the work be done independently and simultaneously in many cities

and states. Each then serves as a check upon the others. And what is for the present more important, each can best educate itself for the work by doing the work. In any revised educational program, every worker should be thoroughly familiar with it. This familiarity is to be acquired chiefly through participating in the labors of formulating the new program. Understanding is not a thing which can be imposed. It *grows* up out of practical experiences.

Some of the abilities that will be set down in the general comprehensive list must be of a type which are possible and practicable for only a part of the population. Whether we like the matter or not, we must recognize the plain fact that individuals differ in their natural capacities. Mentally some are of large capacity, others medium, others small. No amount of educational labor will develop large ability on the part of those possessing low natural capacity. For these we shall be compelled to determine a limited set of abilities and we shall have to aim at only a moderate, or even low, standard of achievement in those abilities.

On the other hand, those of large potential capacity should have their powers fully unfolded. They should be expected to develop types of ability that are not appropriate to their weaker brethren; and they should attain higher levels of proficiency where they are aiming at the same general types.

The ability to read a foreign language, for example, is appropriate for those of considerable natural ability. It is not a needed nor a desirable ability for every mem-

ber of our population. The ability to do public speaking is for some but not for all. A broad vision over human affairs, historical and sociological, is possible for those of large intellectual caliber. The same type of vision and understanding is unfortunately impossible for those of low intellectual endowment.

The comprehensive list of abilities and characteristics should be that which is appropriate to individuals of large natural capacity. It can then be cut down to meet the needs of those of lesser capacity.

The essentials of the education of the bright transcend the essentials of that of average pupils. The essentials required by the latter go beyond those of the dull. "Minimum essentials" which equally represent the irreducible needs of all is a myth. A different set of minimum essentials needs to be formulated for each ability class.

The abilities that are generally needed by men and women, without regard to their specialized occupations, are the objectives of *general education*. Except as the objectives must differ according to natural capacity and social situation, they should be much the same for everybody. The abilities enumerated in the first nine lists of the foregoing chapter are the objectives of general education.

The specialized abilities involved in any calling are the objectives of *occupational education* for that calling. To prevent confusion, the objectives of vocational education should be drawn up strictly with a view to the vocations, and in no degree for general training purposes.

The *ultimate objectives*, in non-quantitative form, as in Chapter II, are first to be located. After this is done, it is possible to decide how far pupils should go each year in attaining the several goals, and thus to determine the *grade-objectives* or *progress-objectives*. It is even possible at present in some cases to make grade standards quantitative. Except as they can be made quantitative, however, it is practically impossible to fix progress objectives. About all that can be done in any case is to set up the ultimate objective as the goal of work of all the grades; to lay out the long sequence of pupil activities and experiences for all the grades from the time the training is begun until the goal is reached; and to cover on each grade level that portion which is appropriate to the pupil's level of maturity.

The comprehensive list of objectives approved for the schools should include definite statements of *all* powers, characteristics, and abilities that are to be aimed at. There are then no others sanctioned. It will then include the rightful objectives of each and all special subjects and departments. Let each department then find the ones which are its responsibility. In the chapters in this volume which deal with the special subjects, the plan recommended is used. The special subject objectives are taken from our illustrative comprehensive list, and bear the same numbers.

CHAPTER IV

PUPIL ACTIVITIES AND EXPERIENCES

EDUCATION is the process of growing up in the right way.

The objectives are the goals of growth. The pupil's activities and experiences are the steps which make up his journey toward those goals. The activities and experiences *are* the curriculum.

The curriculum-maker will take the objectives, sometimes singly and sometimes in groups, and discover what the pupils should do and experience by way of achieving the desired results.

This task must be approached with circumspection. There are a number of obstacles to be avoided. One of these is the common conception that education is mostly a matter of textbook memorizing followed by lesson-hearing. It is not usually regarded as primarily a matter of growing up in such a way that one develops the specific abilities and qualities which are to function throughout life.

As a corrective, the curriculum-maker will always keep the functional objectives before him. If he has himself discovered them in his own social analyses, and if he has stated them in common-sense terms, then he can always see education as the process of developing human powers and qualities in human beings; and that anything else is irrelevant. And he can see that there

is no other way to produce them but through the processes of growth.

Another obstacle is our dominant educational methodology. This tells us what a pupil should do in order to master subjects. It has not greatly concerned itself with what he should do and experience by way of developing right attitudes toward life and affairs, or ability to perform the citizen's inspectorial function, or lifelong recreational habits, sense of social justice, good health habits, or the thousand and one human things which make up man's everyday life. The familiar task of mastering abstract subjects out of relation to man's life is a quite different matter.

The best corrective for this archaic methodology is a generous application of common sense to the processes of education. Let one view the objectives clearly as human qualities and abilities. One can then usually see a common-sense road to the attainment of each. His educational science can be nothing more than a refinement of this common sense. Naturally one will assemble and use all available educational science. It is unfortunate that there is not more of it.

Let us begin with this question: What are the *general types* of activity and experience dictated both by common sense and educational science, which will enable the pupil to achieve his several goals? Here are some of them:

1. Observation. From early infancy onward, without thought of learning, man normally observes the

world round about him. As he moves along the streets, drives through the country, sits at a car window, visits a factory, coöperates with his fellows, and wherever else, he is ever watchful, automatically watchful without effort or intention, of persons, actions, manners and customs, the things and phenomena of nature, the work of man's hands, and whatever else makes up his surroundings. Child or man, savage or civilized, this continuous observation is one of man's normal reactions to the presence of environment.

This observation is not merely visual. He also listens without conscious effort to the sounds, particularly the language, which make up his auditory environment. He explores things with his hands. He tests things with sense of taste or smell. He lifts them, feels them, turns them over and examines them. It is the habit of man at all stages of maturity, all ages, all lands, and all levels of culture.

It is the nature of man thus to observe. He does not do it for the sake of placing information in storage. It is only a mode of living. To omit it is in part not to live. To do it consciously for the sake of placing information in storage is not to do it normally.

The curriculum-maker will find the kinds of observations which individuals ought to make by way of arriving at the goals of their education, and which at the same time are possible within the practical circumstances. Some of these will be in school laboratories, shops, gardens, and clinics. Most will be outside of the school plant, distributed through the community:

homes, streets, shops, stores, factories, farms, woods, and the thousand portions of one's environment. They cannot be taken to the schools. To observe them one must go to them. It is folly to try to develop an understanding of the world as it is without an abundant and direct observation of the world as it is and where it is.

Most of one's observations cannot be normal if made class-fashion with a crowd. The excess sociality induced by such a situation intensifies the pupils' observations of each other and correspondingly diminishes their observations of things outside the class crowd.

Neither can the observation be normal if the educational purposes be too conscious. Fundamental experiences appear usually to be best for education when the pupil is not greatly conscious of their educational purposes. They appear to be best when he is simply living, and nothing more. When the pupil's education becomes self-directed, naturally he must become conscious in some degree of the purposes. But these should not get too much in the foreground of his consciousness.

The technique of employing normal observational experiences outside of certain laboratory and field work is much undeveloped. The curriculum-maker will search out the ways and means of greatly augmenting it in amount and of making it thoroughly effective.

There is one type of observation which is specially important and which therefore should be specially singled out, namely: the sympathetic observation of

desirable types of behavior on the part of others. Education in the main is to develop powers to do desirable things in desirable ways. Let one therefore see others doing these desirable things in the desirable ways. Let him look upon them favorably and sympathetically. He will then be impelled to do the same kinds of things in the same kinds of ways. As he does them, his powers are molded into corresponding forms. The mind grows according to its patterns. The curriculum-maker, so far as practicable, will see that observational conditions provide for this unconscious social imitation.

In the case of most functions, one needs to see them performed by others. With only a few things, as for example, winking the eyes or walking, one's instincts are fairly definite and one scarcely needs to view the patterns set by others. But most of one's instincts do not provide for the exact forms of action. It is what one observes others doing that gives him the forms. He sees, for example, some one drive a nail with a hammer. He then can drive a nail with a hammer. He may do it awkwardly at first; but the observation has given him his whole pattern. He simply works to that pattern until he can do it skillfully. Observation supplies the things omitted in the instincts. Thus nature has provided for social adaptation.

2. **Performance of function.** The mind grows according to its patterns. But it will not grow without exercise of function. The patterns are not merely to be looked at. They are to be used. However good

the pattern, one will not learn to saw a board, or do handwriting, or play a piano, until one saws boards, and does the handwriting, and plays the piano, for himself. One will not learn to perform the functions of the good citizen by looking on. Observation will give him the patterns of conduct, but not the substance. He must himself perform the functions of the good citizen before there can be hope of growth in civic ability. In one's occupation, one needs the patterns of performance; but one will become skillful, resourceful, and responsible only as one performs the labors of the occupation for one's self.

For the academic activities of the school, this is old doctrine. Of course we have practice in handwriting to give one power to write; in dictionary work to give one power to use the dictionary; and in the other so-called "fundamental processes."

The difficulties begin to arise when there is need of functioning which is not merely academic. In occupational functioning, for example, the school can give some preliminary ideas of tools, materials, and processes; and sometimes a certain amount of mechanical drill and skill in the use of tools. But in most occupations the responsible work itself cannot be brought to the schools. The fundamental educational experiences can be had only out in the community in the practical occupation itself. It is therefore no easy matter to arrange and administer occupational education.

The difficulty is even greater in the case of citizen-

ship training. Here in large measure we lack even the patterns of conduct. No one knows specifically just what the good citizen should do in his capacity of good citizen. We know a few things, but are disagreed upon most. Therefore we do not know what civic conduct the pupil should observe in mature good citizens by way of securing his patterns, and then himself perform for the sake of the training. We do not even admit that he needs thus to observe and to perform responsible civic activities as a means of developing civic ability. We admit that one must practice handwriting, not merely talk about it; but our citizenship courses ordinarily assume that one can acquire civic and economic abilities by talking piously, patriotically and sentimentally about social arrangements, rights, and duties. It is an easy way to spend the time; it has values; but it should scarcely be dignified with the name of citizenship education.

Similar difficulties arise in arranging training through fundamental practical experiences in most of the fields of human functioning: health, recreation, parenthood, unspecialized practical arts, and even language.

One of the most mischievous obstacles to educational progress is the false assumption that all necessary processes of education are possible at the schools; and that whatever is not there possible is not necessary. It is a subject-teaching fallacy. As education becomes functional, this conception must be discarded. Of course, there is much which can best be done at the schools; but there is also much, and possibly the more

important portion, which is best accomplished through activities in other places in the community. There is nothing in the nature of things which decrees that all education is to be taken care of at schools any more than that all health is to be taken care of at hospitals.

Whether we appeal to science or to common sense, the dominant principle of educational method appears to be this: *The mind grows according as it is exercised.* Ability to function is developed through normal exercise of function. One learns to do a thing through doing it. One acquires normal attitudes toward a function and toward everything related to it by performing it under normal conditions. One acquires power to direct a function with wisdom by directing it with all the wisdom one can muster and maintain. One learns to live a civilized life of the type approved by our age by living a civilized life of the type approved for our age.

These experiences of "normal living" type, from which education normally results, we shall call the *fundamental* educational experiences. Education will employ them in maximum measure; and anything else only so far as needful.

Almost every objective of education can be stated as the ability to do something, whether subjective or objective. The principle above stated therefore applies to practically the whole of education.

A thing will often be done crudely and awkwardly in the beginning. Skill will be developed by repetition. It will often be performed at first on a simple and

primitive level. Any steep is to be climbed by beginning at the bottom.

For many things a good deal of information is needed for guiding the processes; and this information is too intangible and complex to be picked up incidentally as a part of the performance. In this connection three things are to be said:

(1) Greater dependence can be placed upon the normal processes of living, when rightly conditioned, as a means of mastery of information needed for directing the normal processes of living, than is ordinarily assumed.

(2) Often there must be conscious preparatory or preliminary mastery of technical information related to the activity prior to undertaking the activity itself; together sometimes with still further studies proceeding alongside. In such case the gathering of the information is an organic part of the total performance of the function. It is information-mastery on the functional level. We shall call this the preliminary, preparatory, or *accessory* portion of the educational experience to distinguish it from the fundamental educational experiences of normal living.

(3) Experiences of fundamental "normal living" type on the intellectual play-level appropriate to the different degrees of maturity of childhood and youth should result during the earlier years in an abundance of the information called for later in one's practical activities. Thus fundamental activities of one sort in one year lay informational foundations for funda-

mental activities of other sorts in a later year. This is to say that if sequences are properly cared for, education can depend mainly upon fundamental experiences; and will have recourse to accessory ones only where matters are specially technical.

3. **Reading.** Language is an instrument of vision. So intimately is it inwrought in the organism it would perhaps be more accurate to call it an organ of vision. The current gossip, for example, that our friend brings to us enables us to see what he has seen about as clearly as if we had seen it ourselves. If he is more clear-seeing than we, and skillful in language, he may enable us to see the things more clearly than if we had seen them with our own eyes.

Man is untiring in viewing the world through the medium of language. He is never sated with the gossip concerning his friends and the immediate community affairs. Avidity grows with what it feeds upon. Deep-seated instinct lies at the core of the language type of observation.

It has advantages over direct observation. It transcends the limitations of time and space and sense. It lifts the curtain upon the whole nation and all of its activities, the whole world and all of its strivings, and even the universe beyond as far as man has been able to penetrate. It opens up the past to one's vision. It can make the long past live before one's eyes as clearly as the past of an hour ago. It enables one to see the hidden, the minute, the intangible, the invisible, the general.

It has a further very great advantage. With the eyes of sense one must do one's own seeing; and none can help. But when one observes through the medium of the language of others, the seeing ones can greatly help the unseeing ones. The mature can help the immature; the trained, the untrained; the competent, the incompetent. When the clear vision of the most discerning few is put into language, it can become the clear vision of all. There is no influence greater than this for the upbuilding and maintenance of our civilization.

The language revelation of the world will mainly take the form of *reading*. The major problem then is, What should be read? In the search for a solution, let one ask this question: *What should man observe?* With what things should one, through this indirect observation, become familiar?

Man no longer lives within a narrow community. He has come to live in a large world, and one that is endlessly complex. He needs to see this world in a large way and in a balanced way. He needs to see the essential factors which make it up, and the forces which operate it. These are exceedingly numerous. Some of these are human things and some non-human. The experiences of observing them should be abundant and unceasing. Out of this, the balanced vision grows. Most of this observation must employ the medium of reading. One will see the things through the eyes of those who have seen them directly, deeply, and clearly, and who have skillfully wrought their vision into language.

After the curriculum-maker has discovered what man should observe, his second step is to find the revealing readings. The best the world has to offer are the only ones that are good enough. They must be of a kind which easily arouse one's instinct to observe. They must therefore be very human. This means that for the most part they should be concrete, vivid, emotionalized. They should be replete with the many details, so deftly handled by the skilled literary artificer, that awaken native interests, and automatically catch man's very human kind of attention.

The reading is to be a mode of experience, a mode of normal living. It is to be for the slow year-long growth of the twigs, branches, and trunks of the mind. Most of the detailed matters met with in the reading, like foliage, will be deciduous. In fact it must be deciduous and fall away if growth of the trunk and branches is to be healthy and normal.

Provided the right selections are used, the reading experience is best where there is least consciousness of the educational purposes; where one is simply luxuriating in human experiences. Certainly there should not be the quite unhuman purpose of merely placing information in mental storage. There should be no attempt to make permanent the things which should be deciduous.

One should here distinguish between "education as memorization of facts" and "education as growth of powers by means of exercise of function." It is the latter to which we refer. For growth, the readings

should provide abundance of exercise; and continuing exercise. It should provide for growth through the years of growth, and for maintenance through the years of maintenance.

4. **Oral report.** In one's indirect observation by means of language, one mainly will read. But often he will listen to the reports of others. These will be presented by teachers, juvenile associates, parents, friends, members of the community, travelers, investigators, lecturers, and others, according to circumstances.

Since one's natural or instinctive form of language is oral and auditory, there is a vividness in this mode of presentation which is ordinarily lacking in the printed word. For this reason, particularly in the earlier years of education, there should probably be a quite considerable quantity of listening to the oral reports of experiences and observations of others. As one grows more mature, reading comes to be so much a matter of habit as to be practically as easy and automatic as the auditory forms.

5. **Pictures.** Pictures, using the term to include all available kinds, provide us with another means of observing things distant, past, and otherwise inaccessible to direct observation. They are specially valuable for giving one a visual imagery of details, both of things and of processes. On the visual side there is a vividness and detail that is distinctly superior to that of the language presentation. Doubtless pictures should be used in far greater abundance than is yet practicable.

Yet there are serious limitations: (1) Pictures provide for an understanding of only the visual aspect of things. The reports from the other senses are lacking; and these are matters of no mean significance.

(2) Pictures reveal only the outward or material appearance of things. The essence of human life and experience is not material and is not visible to the eye of sense. The deep-lying forces and influences which operate the world are not things that can be revealed by pictures.

(3) Pictures reveal only the concrete. While there should be an abundance of this, yet we need some type of presentation which reveals the general.

(4) Except in the case of relatively simple and concrete matters, it is not possible to use pictures to give over to all the thought and judgment of the discerning few.

In all of these matters, language is immeasurably more serviceable than pictures. These limitations of pictures should be noted because of a tendency in certain quarters to over-value the possibilities of pictures as means of education. They should be used abundantly to supplement language presentations; but they are not the major means of educational experience.

6. Prolonging, repeating, and intensifying one's experiences. It is in the nature of man to think over his more vivid and significant experiences, to repeat them in imagination, to tell them to others, and thus to re-live them a second, third, tenth, or hundredth time. Some of this is done in the quiet of one's soli-

tary meditations; and some of it as he discusses his experiences with his associates. Each of these forms has its values and the curriculum should employ each kind in due measure.

7. Problem-solving. In one's thought, whether in solitude or in group, one is ever dealing with *problems*. Where things are clear and understood, they are taken for granted and passed by. Where decisions have been made, conclusions drawn, or plans perfected, there is nothing further to consider. It is where things are not clear, where decision hangs in the balance, where problems are to be solved, that one gives his attention and his thought.

In the degree in which education is living experience, the pupils will be meeting with problems at every turn of the road. Problem-solving, individually and in class-discussion, will be a major type of pupil experience.

8. Generalization. In one's observations, one may see concrete things of a kind as individuals; or he may see them as a class. He may see the operation of a force within a specific situation; or he may see it operating within a number of situations and discern its common nature and operation in them all. To see the world in a generalized way is thus but a portion of one's observation of it.

Where observations in any field are easy, frequent, and abundant, one normally and inevitably does much classification and generalization without thought or effort. But where forces are intangible

and difficult to see, and relations still more difficult, then the original concrete observations tend to be lacking; and as a consequence the generalizations naturally do not crystallize themselves out. Effort must be made in doing the original seeing. Laboratory demonstrations, field observations, social surveys, and the like, will be mainly for assistance in making the original concrete observations.

A large part of the problem-solving will be making analyses and arriving at generalizations. Another large part will be using the generalizations in the analysis of new situations.

The More Specific Pupil Activities

It appears possible thus to enumerate a relatively few general types of experience. As the curriculum-maker then takes up the several objectives, one by one, or by cognate groups, he will find the specific ways in which these general types of experience will manifest themselves. Looking to any given objective, he will set down the specific activities that the pupil will perform. Let us take a single objective and illustrate:

The Objective: Ability to choose a vocation which promises satisfaction and success.

Pupil Activities:

1. The pupil will observe the labors and the working conditions of the several vocational groups existing in his community.
2. He will participate in the practical labors of some of the occupations, either in school-shop "exploratory" courses or as part-time helper in outside vocational labors.

3. He will view numerous vocations indirectly through readings that present them concretely, vividly, and adequately.
4. He will view pictures which show the working conditions of numerous occupations, and the processes performed.
5. He will listen to the oral presentations of those who have worked in the occupations themselves.
6. He will analyze the several occupations studied and make comparisons relative to hours, wages, sanitary conditions, and chances for advancement.
7. He will talk over his experiences, observational, analytic, participative, and the like, with both juvenile and adult associates.
8. He will, etc., etc.

This may be continued much further. It is good to state each activity in terms of what the pupil will *do* or *experience*. One should avoid stating what he will know or be, since these latter are neither activities nor experiences.

Often one will take a group of cognate objectives, such as those stated in later chapters for the literature or science, since they are closely interrelated, and work out the pupil-activities for all of them at once in one list. But in such case one should take up each objective separately, and carefully examine one's final list of pupil activities to see that each objective is adequately cared for.

In the case of most objectives, there is a long road to be traveled from infancy to maturity. The pupil activities will differ according to the ages of the pupils.

The first step is to formulate a composite list which enumerates all kinds of desirable experiences involved in the entire journey. This done, the next step is to decide which of these are appropriate to the early grades, and in what form; which to middle grades; which to later grades; and so on to the adult level.

When this is done one still has but a list of the *types* of activities and experiences. The final step then is to lay out the detailed activities of these various types for the day-to-day experiences of the children on each age or grade level. One needs the list of types before him for guidance in the choice of details. The latter make up the curriculum.

The formulation of the list of types of pupil experiences is greatly complicated by the presence of individual differences. The activities of pupils of large natural ability must often, possibly usually, be different in many respects from those of children of lower natural ability. For all ability-levels, there will be the same general types of experiences. But they must be very different in quantity and proportion. In drawing up the pupil activities and experiences which make up the detailed curriculum, the work must be done separately for the gifted, the average, and the sub-average.

In large measure this differentiation must result from practical trial. It seems that our first responsibility is to work out the pupil activities and experiences that will carry the gifted pupils most effectively to the highest practicable heights. This done, we shall have the average pupils travel the same road so

far as it is in their power normally to do so; but modify it so far as their limitations make it necessary. The sub-average will travel the road laid out for the average so far as they can do so; but they will depart from it when their limitations make departure necessary.

CHAPTER V

GENERAL EDUCATION

EDUCATION exists on two levels: the foundational and the functional. The foundational education is the unfoldment of the powers of the individual without consciousness of the relation of these powers to specific functions. The child at play, for example, is having experiences for the joy of the experiences. Neither he nor his parents look upon them as conscious preparation for the specific abilities of the man in discharging his adult responsibilities. He is merely acting from inner impulses in response to the immediate stimulations and opportunities. He is living. He is not being "educated." And yet his experiences are conditioning — and in a sense, producing — his general growth: physical, social, intellectual, æsthetic, moral. For example, his musculature is being developed by his play: strength, endurance, quickness, and certainty of coördinations. This is quite general muscular development. The physical powers thus developed will function later in the specific activities of the adult whatever they may be.

The foundational training results largely from experiences upon the play-level. The broad range of diversified physical play is the experience which best lays the physical foundations of one's life. It is the diversified activities of social play which lay the foun-

dations of one's social life. The numerous and diverse types of intellectual play, more than anything else, lay the foundations of all of one's intellectual life. And equally, it is one's æsthetic play activities and experiences which provide the fundamentals of one's æsthetic life. While much of this will be extra-mural, yet the schools will provide abundantly for experiences on the play-level. Since this will be done by teachers, they must be conscious of the play-activities as educational procedure. Those being trained, however, will see it only as play experience. On the foundational level, the children will not be conscious of the specific educational objectives.

This is the first level of general education. In quantity of experiences and in time allotment it will probably constitute the largest portion of one's education. To the teacher's vision it is fully functional in the sense that the foundations are being laid for the later specific functions. The experiences are to be carefully conditioned and guided by the teachers in such way that they will lead to growth along physical, social, intellectual, and æsthetic lines of sorts that are needed as foundations of the specific abilities that are to be built thereon. Teachers will see that the growth is balanced, proportioned, harmonious and full, producing a full-grown, well-rounded man or woman; not a distortion.

On the physical side, there are differences among individuals. Yet the broad outlines of growth and the experiences that condition growth are much the same

for all normal persons — the only type with which we are concerned in the discussions of this volume. Equally, on the side of social, intellectual, æsthetic and moral potentialities, there are individual differences. And yet for all normal persons the broad outlines of growth are about the same, and the general types of experiences are much the same. In details they will differ endlessly according to general native capacity and special aptitudes; but only in the details of the program. Since the foundational growth along the several lines should continue through elementary school, high school and junior college, we find here a justification for certain "constants" which should run through all the grades of general education and which are part of the training of all individuals.

It is not enough, however, to have one's general powers thus unfolded by diversity of experiences on the play-level. The responsible man or woman has *things to do*. He should be trained to do them specifically and to do them well. He should be conscious of his responsibilities, and the need of proficiency in performing the specific activities. This brings us to the level of *functional education*. It is not really more functional than what we called the foundational, but it is *consciously* so; and the functions are specific and are held before one as the goals of the training. Here the pupils as well as the teachers should be conscious of the educational ends.

Of the fields of specific functioning, we have said that there are ten — as classified in Chapter II. Of

these, nine are non-specialized. The abilities are to be developed in all individuals. Not equally, of course, since potentialities are unequal. But in kind, the powers aimed at will in general be about the same. As students are classified into ability-groups, high, medium, and low, the broad outlines of each program will be the same. The details will be as different as individual differences make necessary. It seems therefore that the nine fields of non-specialized functional activities call for a broad range of "constants" for all students. Except for the differences demanded by variations in capacities and aptitudes, there seems to be no call for specialization in these nine fields of functional training.

That portion of the training, both foundational and functional, which is of general need, whatever be one's occupation or station in life, we shall call in this volume *general education*, the term signifying non-specialized education, or the common element in the training of all persons. Except for brief references here and there to occupational training, all the discussion of this volume relates to the common or general education.

Over against this is the tenth functional field of specialized or occupational education. Here each occupation is analyzed independently by way of discovering the specific activities involved. The objectives will be only the specialized abilities called for by the specific activities. The abilities will be developed only in those who have chosen to go into the given occupation where they are demanded.

When things are included in the educational program for occupational purposes, they will be placed only in the occupational courses, and taken only by those who are consciously taking their occupational training. For example, activity-analyses will show that trigonometry is called for by the activities of the engineer; that it is not called for by the activities of typists, physicians, or milliners; nor by the general activities of persons outside of their occupations. As a consequence, trigonometry will be prescribed as occupational training in the courses for engineers, but not in courses for the other occupations named; nor for general education. *Never will a subject be placed in the general training for all persons simply because it is of specialized value for certain occupations.* When this is done, one has employed vocational analysis as a method of discovering the objectives of general education.

The absurdity of this confusion of vocational and general is obvious when one clearly distinguishes the two. The error, however, is common because of a frequent haziness of ideas relative to the constituents of the general and of the vocational, and of the relations of the one to the other. Thus trigonometry is often included in the high school for vocational purposes and then opened to everybody for general education. There is similar confusion of vocational and general in the administration of algebra, physics, drawing, practical arts, Spanish, economic geography, and many other matters.

In the following statements, we indicate some of the details of the program which appear naturally to follow. In some degree the statements anticipate matters later to be discussed. They refer to all levels of education from kindergarten to junior college.

The Program

1. The general training needed at present by any normal person of whatever station goes much beyond that needed a generation ago.
2. The general training will provide the foundations for all functional training; and also care for all functional training except the specialized or vocational.
3. For those who intend to secure that fullness of general training which is needed by the men and women of today, the entire public school period from kindergarten to the end of senior high school or junior college will be devoted to the general training; the specialized or occupational training will not begin until the close of the high school or junior college.
4. With possibly a few exceptions, later to be mentioned, the general training should probably occupy the entire time of the student so long as he is taking the general training; when the time arrives for beginning his specialized training, the general should end and the entire time of the student be devoted to intensive, responsible training for his occupation.
5. Courses are to be drawn with the presumption that students will take both general and occupational training; and in the order of sequence best for both.
6. The junior high school should assume that its purpose is general and not vocational training. The student who goes on to the senior high school will take only general training on the junior high-school level. The latter will organize all of its work so as to emphasize the general and so as to postpone the vocational.

7. Senior high-school students should be encouraged to take the entire general training course before entering upon the vocational training.

8. The general training program will consist of two portions:
   (1) *The basic general training.* This is training for those human qualities and abilities the need or desirability of which is universal, evident, and generally accepted.
   (2) *Additional opportunities* or *extras.* These are designed to train for human activities that are not specialized and yet not universal; for things that appear to be relatively remote from fundamental human activities; and for things upon which there is no relative unanimity of judgment.

9. The lines of training to be cared for in the basic general program are probably the following:
   (1) English language: reading, oral and written expression.
   (2) Citizenship attitudes, judgments, and activities. Social studies.
   (3) Literature: English and general.
   (4) The several science fields.
   (5) Everyday mathematics.
   (6) Physical training, hygiene, sanitation.
   (7) Unspecialized practical arts.
   (8) Musical appreciation and judgment.
   (9) Art appreciation and judgment.

10. Capable, industrious and ambitious students should be permitted to widen their general training program through the taking of certain extras, such as the following:
   (1) Foreign languages.
   (2) Advanced mathematics.
   (3) History of English Literature.
   (4) Music for technical proficiency.

(5) Art for technical proficiency.
(6) Literary writing for technical proficiency.
(7) Typewriting.
(8) Dramatics.
(9) Public speaking.
(10) And many others.

11. Except as students are differentiated into ability classes, there should be but one curriculum of general training, extending through all of the grade levels from primary to end of junior college. Neither its outer boundaries nor its upper limits can be definitely fixed. In these outer and higher portions there should be full freedom of opportunity for any student to go as far as he will or can go, — so long as his total program is reasonably well balanced.

12. The basic lines of training should never be elective.

13. For normal persons, the extras should never be permitted to displace any of the basic lines of training. They should always be additional to the basic training.

14. The achievement of a desirable level of proficiency in all of the needed basic training should be pre-requisite to the choice of any of the extras.

15. Failure on the part of any student carrying extra subjects to maintain proper standards in the basic training should result in his dropping extra subjects until he has brought his basic training up to standard.

16. Students will not be required to take any of the extras. They are offered as *opportunities*. Students should be permitted to take advantage of them provided the basic training does not suffer thereby.

17. The only electives in junior high school, senior high school, or junior college will be those which are extras and taken over and above the basic general training.

18. The extras will not be administered to the student who cannot take advantage of them without an undue amount of teacher labor.

19. In administering the basic training there should be at least three groups of students classified on the basis of ability.

20. Students of sub-average ability will usually devote their entire time to achieving sufficiently high standards in the basic lines of training. Except as individuals of this type have well-marked special aptitudes, they will not elect any of the extras.

21. Students of the middle ability group will devote their major time and effort to achieving sufficiently high standards in the basic training. In general, they will not elect any of the extras. Here and there however will be a student of special aptitudes along some particular line, or of special industry or ambition, who will desire to take one or more of the extras.

22. Students of the high-ability group will give the major portion of their time and energies to the achievement of specially high standards in the field of the basic training. Because of their large powers of self-direction, their program will be so drawn, however, as to permit them to take a reasonable or even large advantage of the extras. This is always on condition that they achieve the approved levels of the basic training.

23. The basic training in its detailed content should first be formulated for the more capable ten or twenty per cent of the population.

24. Courses for the less capable levels of pupil ability will be largely derived from that prepared for the most capable by abbreviation, elimination, lowering standards, providing an easier gradient, and the like.

25. Each line of training should provide for such continuity of growth that any student will have had training along all lines at whatever point he may drop out of the school.

26. The full values of the extras will be made clear to those students who are in a position to avail themselves of these opportunities; and they will be encouraged to take advantage of the opportunities.

27. The offering of sufficiently numerous electives, in addition to the basic course, will give all desirable freedom of spontaneous choices to those in position to utilize such opportunities.

28. The curricula designed for members of the three ability groups cannot consist of an equal number of equal units. Content of units must be unequal. The number of units of the basic work may vary. The number of extras will vary greatly from individual to individual.

29. In the basic general training, there should be a minimum of departmentalization. The extras of the general training may be departmentalized in any degree.

30. There will be no specialization within the field of the basic general training. Both in character and in application, it is to be what the name indicates.

31. Where there is specialization there is the presumption that it is vocational specialization.

32. In addition to the one general training course where there is no specialization, but opportunities for many extras, there should also be offered many specialized occupational courses.

33. Except as the schools train for all important occupational fields, their influence will be to over-fill certain occupations and to prepare an inadequate number of entrants for other occupations. Both results are undesirable. The schools should, so far as practicable, train in a balanced way for the entire range of useful occupations.

34. Except in special cases, the occupational training will come immediately after the close of the general training.

35. For those who cannot or will not avail themselves of opportunities for full general training, the occupational training should be offered at the time that they choose to discontinue their general training. This means that occupational training is to be offered those who drop out of school upon each of the levels from late junior

high school to the end of the senior high school. This calls for low-grade occupational courses for immature students and high-grade courses for advanced students.

36. Where a student leaving school prematurely finds it advisable to take a juvenile vocational training course prematurely, whether in the last year of junior high school or in some year of the senior high school, his general training should continue to the latest practicable moment before the vocational training is entered upon. The latter should then be given intensively by way of ushering him with the greatest practicable impetus into the occupation itself.

37. Parents and children should be made thoroughly familiar with the nature, purpose, and content of the general training by way of securing their support for full general training prior to the vocational training.

38. The vocational training which can profitably be given upon the junior high school level must be training for a juvenile occupation or the juvenile level of an adult occupation. Nothing more than a relatively brief vocational course is therefore warranted. And it is only for those who leave prematurely.

39. Vocational courses for those who leave school prematurely should train for jobs which are actually obtainable.

40. Occupational courses will be long enough to achieve the approved standards of occupational proficiency; and no longer. Courses for different occupations will be of different lengths ranging from a few weeks to many months. They will not be artificially equated in length.

41. For each occupation a careful study should be made of the amount of time actually needed for achieving any given standard of proficiency. The occupational course should then be of this length even though it be an irregular number of weeks or months. When the vocational training comes at the end of the general training and occupies the full time of the class, then this time-arrangement is easily administrable.

42. There is to be no trifling with occupational training. It is to be administered only to those who have chosen an occupation and who intend to go directly from the training course into the occupation itself. The only exceptions should be where certain occupational courses are opened as extras to those taking the general training.

43. The general education needs to be improved, and the community understanding and appreciation of it developed, if it is necessary to have a long anæmic four-year occupational course in the high school in order to hold the students in school for the general training.

44. The extras of the general training can often be employed for building broadened and deepened foundations for specific occupational training to which certain of the students will look forward. This field of extras may therefore constitute a justifiable twilight zone between the general training and the specialized vocational training. It may thus definitely count for both.

45. When one of the extras can be part of the general training of high-grade amateurs and at the same time vocational training for those who have definitely chosen that field for their calling, then it is possible and probably desirable to have the vocational run parallel to the general training. This appears to be true of training for musicians, artists, designers, professional literary workers, foreign language interpreters, etc. There are but few such occupations.

46. Vocational courses parallel with the general training are probably justified only in the case of those vocations that one can enter currently into, usually at home, during school days: agriculture, animal husbandry, household occupations; or those which can run as extras for the general training of amateurs while at the same time vocational training of professionals.

47. Each occupational course should confine itself strictly to the matters involved in the particular occupation. General educational is not its province.

48. In the case of students going on to college, their major need is the general or unspecialized training. Among their extras, they may choose courses especially desirable as foundation for already chosen professional courses to be taken on the college level. Except for these extras, for these students, there will be no prevocational training upon the high-school level.

49. Boys and girls who postpone their occupational training until late should *early* acquire familiarity with *occupations;* be expected early to make choice of vocation; and to plan their education so as to take adequate care of both general training and vocational training.

50. The ordinary high-school graduation requirements are based almost wholly on a pure subject-teaching conception of education; and upon a false assumption of pupil-equality which calls for an equal number of equal units for the equal students. The usual requirements are quite inappropriate for a functional type of education, designed for very unequal pupils.

CHAPTER VI

LITERATURE AND GENERAL READING

How do literature and general reading function in the general community life? How should they function?

1. They widen the range of one's *observation.* In his reading one can view human affairs in all regions of the earth and in all past ages. He can view human institutions in their nation-wide and world-wide distribution. He can view all types of men as they react within all types of environment. He can view all social classes and human groupings of every kind, together with their activities and the conditioning environment. He can see human nature in all of its aspects and its infinitely diverse ways of working. As reported in his reading by those who have seen, he too can see things invisible to the eyes, hidden, intangible, minute, remote, general. Whatever man can see and report in language, he too can see. Thus reading removes the limitations of one's narrow environment and gives one vision over and into a world as wide as any man's vision can extend. It takes him out of what would otherwise be his little world and places him in the midst of a large world. Literature is in a way a magic window overlooking the affairs of men and enabling man continuously to see to the farthest ends of the earth. It should be abundantly used by all men and women. It should present a vision that is true, undistorted, and

proportioned. It should reveal the things which make up the world according to their values and their significances.

2. Reading widens the range of one's *participation* in the affairs of men. As one reads a vivid story which pulsates, let us say, with the life of the middle ages, in a very real sense one relives the human experiences of those days. In a narrative which reconstructs the life, for example, of India, one experiences for a time the life of India. In the same way, where the narrative is an adequate reconstruction of human experiences, reading makes it possible for one to participate vicariously in human experiences in any region of the earth and in any historical period.

Reading enables one to live in a large world. The huge and beneficent institutions which man has created in recent generations could never have been developed by a race of beings whose vision and experiences were confined to their immediate physical and social environment. They cannot be further developed except as there is this largeness of vision and experience. They cannot even be maintained on their present levels unless there is continuance of these expansive experiences.

3. It widens the range of one's *thought*. The wider the range of one's observational and participative experiences, the greater the quantity of thought materials and the broader the foundations of one's thought. One is thus prepared to understand and appreciate the intellectual reactions of men living and thinking and expressing themselves under diverse conditions. Read-

ing can then bring to one the more general thought of men of all times, regions, and environments in their reactions to life and affairs. It can thus take one out of the narrow provincial thought of one's immediate environment and place him in the midst of the large world of infinitely diverse thought.

4. It *elevates* one's thought. In the nature of things there can be relatively few great thinkers. But all can read the writings of the few. All can then think the same large thoughts, in the same large ways — so far as their native capacity permits. In any case each one can rise above the plane of his own natural thinking. While lesser minds will not achieve the highest heights, they will rise to higher heights than had this influence been absent.

5. It enables one to see with the eyes of those who have seen most clearly, and to feel with the hearts of those who have felt most deeply. As a matter of fact, mankind seems to live upon a plane which is above that which would be determined by the average vision, intelligence, and good-will, were this average operating alone. The follow-the-lead instinct is strong in man and he instinctively discerns the presence of those of larger vision and understanding. He tends strongly therefore to take on the vision provided by the clear-seeing ones as these latter express their vision in language; and to reflect the feeling and general reaction of those who feel most deeply and react most vigorously as these express themselves in language.

6. Reading awakens the *interests* of men. As the

modern world grows complex, and one's contacts and interdependencies more extended, one needs to know about more things and therefore be interested in more things. To have experience with things, especially interesting experience, is the method of awakening one's interest in those things. Reading provides observational and participative experiences of kinds needed for awakening the interests.

7. It enables one *to live*. Reading may function in the beneficent ways indicated; and yet in the main one reads simply as a mode of living. Life is action and reading is one mode of action. One does it because one likes to do it. Reading is scarcely normal except as one reads for the joy of the reading. In man's normal living, newspapers, magazines, histories, and literature, are not studies to be labored over and the facts stored against a day of need. They are simply used as a means of experience. In proportion as that experience is vivid and normal, it accomplishes the proper results of the reading.

In any analysis of community affairs, it will be discovered that reading plays a large rôle; and that it probably ought to play a larger rôle than it does. The curriculum-maker will find the kinds and amounts of readings which are best for man's purposes.

Since reading is a mode of indirect observation, he will ask, What should men observe? The things are countless in number. He has a long list to draw up. Then so far as reading is the best mode of observation, he will find the readings that are best for this purpose.

Since reading is a mode of vicarious participation, he will ask, In what affairs of mankind should one participate vicariously? Again the number is legion. After making the list, he will find the appropriate readings.

Since reading is a mode of thinking the thoughts of others, the curriculum-maker will ask, What are the thoughts of men which should become the thoughts of the on-coming generation? What are the readings which present them in the most effective ways?

In selecting readings for awakening interests, he will begin by asking, What are the countless things of the world, present and past, in which the full-formed man should be interested? He must have a long list of the major ones at least. Then he can find appropriate readings.

We have gone far enough with this to illustrate how one is to take and to use the community point of view in selecting the readings of all kinds. Further suggestions are made, but not discussed, in the list of the objectives of literature and general reading. Following such a plan, the curriculum in this field will be a rich program of vital experiences, satisfying in itself as experience, and yet a major means to the achievement of most of the abilities, attitudes, interests, appreciations, and the like, which should characterize the full-orbed man.

This program of experiences should begin in oral form in the pre-primary training. As reading, it should get under way in the primary school, though naturally

in a form appropriate to the mental maturity of the little children. It will be continuous through all the later stages and levels of one's schooling — an ever-expanding and deepening thing.

The field of literature and general reading is one of great educational complexity; and of controversy. The educationist therefore should formulate in as definite terms as possible the platform of general principles relative to literature and general reading which he can accept and which he is to use for guidance in arranging the details of the program.

In the report of the English committee on "Reorganization of English in Secondary Schools," he will find many suggestions relative to planks which may appear in that platform. In practical curriculum-making, the writer has found the following platform of general assumptions and principles to be of service:

Guiding Principles and Assumptions

1. Our age, more than any preceding one, demands width of vision over all the world, past and present, and beyond; it demands mental alertness, and awakened interests in man and his affairs; and it calls for sympathetic civilized attitudes toward social groups, peoples, nations, and institutions.

2. The most effective method of achieving these results is to come into sympathetic direct contacts with men and things the world over; but there are insurmountable limitations.

3. Where direct contacts are not possible, and this applies to most of the world of the present and all of the past, indirect methods are to be employed. Of these, reading is the most important.

4. Through reading it is possible to view indirectly the distant, the inaccessible, and the past. As it reconstructs human experiences, it enables one to participate vicariously in all kinds of activities in all lands and ages.

5. One's readings should be selected with a view to the widest and most diversified indirect observation practicable; and to correspondingly wide and diversified vicarious participation.

6. For general education, the emphasis in the revelation of things should be proportioned to the values or importance of those things.

7. The readings should truly and faithfully portray whatever they undertake to present.

8. The medium of indirect vision should give a view as true and undistorted as any medium of direct vision. In the degree in which it distorts the view, it falsifies it, and is unserviceable for its purposes.

9. A piece of literature is a language-window through which one looks out on the human drama; the less conscious the observer is of the window itself, the better it is for purposes of observation.

10. The reconstructions of human experiences provided in the readings should be suffused with all the color and warmth and beauty and tingle of life itself; with all the drabness, bleakness and ugliness of life itself; and with the whole gamut of human emotions. Lacking these things, it is not life; not a reconstruction of actual human experiences; not a fit instrument for indirect observation and vicarious participation.

11. Readings are to be used for the experiences. Nothing can be so vital for education as the experiences themselves.

12. A reading selection usually carries, or ought to carry, its whole message within itself. Explanations and interpretations ought usually to be relatively needless. When otherwise, the selection is perhaps either unsuitable for its purposes, or it is being read prematurely.

13. For men and women in general, literature is not to be studied for technique and form; it is to be used for the experiences. The writers intended nothing else.

14. The major experience in using literature for education is reading it — abundantly — with enjoyment — under normal reading conditions.

15. Most that the general reader needs to know about literature he can learn through the process of using it. In order to use a field-glass effectively, the layman need not know anything about its structure beyond what he learns by using it. The same is true of any instrument or medium of vision, literature among the rest.

16. The literary technician, whether amateur or professional, must know the instrument itself with thoroughness. He must know literary technique, be skillful in its application, watchful of technical matters in his own work and in that of others, interested in structural matters, sensitive to flaws, appreciative of merits, and the like. All of these things he needs for his *vocational* purposes. His needs, however, are not those of the general reader.

17. The less the general reader sees the technique of producing effects, the more perfect may be the "illusion of life" produced by the reading.

18. The character of the revelation provided by literature and general reading should vary with the degree of maturity of mind of the individual. In the beginning, readings will reveal things simple, primitive, concrete. As one matures, it will reveal things progressively more and more complex, intangible and general.

19. It is not necessary to have a complete understanding of all details met with in the reading in order to have the experiences needed for mental maintenance and growth.

20. It is not necessary that the reader understand all historical, mythological, or scientific allusions. He reads for experiences; and no man pretends to a thorough understanding of everything which enters into his daily expe-

riences. Some things he understands thoroughly, some in considerable measure, some very little. We must expect reading in this respect to be like all experiences of normal living.

21. Understanding of historical, mythological, technological, scientific, and other allusions is in the main to be developed through abundance of reading and other experiences in the fields of history, mythology, technology, science, and the like. To look up these allusions in handbooks, cyclopædias, and "notes," is but to get a brief smattering of things out of relation; and flavored with the musty dullness of didacticism.

22. The story of the circumstances under which a literary selection was written is only occasionally valuable in securing the thought or the revelation which it conveys. The author, as he writes a selection, does not expect the circumstances to be investigated and studied. He expects the selection itself to carry the whole message. In the degree in which it does not, it is deficient for its purposes.

23. The history of the development of literary forms, structures, and technique is a matter of little significance or value to men and women who are not literary specialists. Books will not be read by the general reader merely because they have an historical interest for the literary specialist.

24. The biographies of those who make literature are usually of no more value than the biographies of those who make automobiles, sky-scrapers, or ocean liners. They should not receive a *disproportionate* amount of time.

25. There is probably justification for a certain amount of literature that is pure play of fancy, unrelated to realities, irresponsible, fantastic even as dream-life. But dreams should be recognizable as dreams. They should not color one's waking conception of realities.

26. It is a mistake to assume that the artist can create a world of unreality which is more beautiful or interesting or valuable than things found in the world of actual realities. Dreams are pale beside reality.

27. There is doubtless justification for the use of literature of music-type — rhythm and melody and harmonious sequences of emotion-producing imagery. For those to whom it appeals, this appears to have the same kinds of value as music itself. Fortunately, this tends to be an aspect of all great literature.

28. Literary art has been devised to please the tastes of a race of beings whose natural interests are in the simple activities of family and immediate social groups, and in the concrete things of the environment.

29. The literary presentation of things, forces, and relations which are high, general, and impersonal, has little appeal to man's native interests.

30. The theory of literary art has naturally been shaped by the simple, even primitive, psychology of mankind.

31. The literary artist and connoisseur often tend greatly to exaggerate the values of literature which merely pleases man's primitive tastes.

32. For a portion of his reading the pupil will live up to the limits of his powers to view things general and impersonal.

33. Studies about literature, for those who need such studies, will be undertaken only after they are familiar with literature through having widely used and experienced it in normal and unsophisticated ways.

34. Men and women are educated for the fifty years of responsible adult life; not for the four years of relatively irresponsible college life. Literature is to educate for life, not for college.

35. Reading habits are to be formed in ways and under conditions in which they are expected later to function.

36. Self-directed home reading contains elements of value which cannot be included in the more academic school reading. In the degree which it possesses values superior to the school reading, this should receive recognition in the credit given.

37. Most reading is silent, individual, and relatively rapid.

38. Language in its natural form is a thing of the ear and not of the eye. For full effectiveness, therefore, some literature should be a thing of voice and ear.

39. It is possible that the technique of awakening high humanistic attitudes, appreciations, interests, ambitions, ideals, sympathies, loyalties, and the like, will demand a considerable amount of oral reading, especially listening to skilled oral reading by those whose character and social position reinforces the high message of the printed page. It is probable also that a pupil needs the emotionalizing that comes from oral reading on his own part.

40. Since literature is to be chosen as a means of experience, it is a matter of indifference in what language it was originally written, or what the nationality of the writer was. Literature in translation is to be freely used.

41. Those who read a foreign language should secure a portion of their literary experience through readings in that language.

42. Most of the content and revelation of literature is human and social. Most of it therefore should be classified with the "social studies" group, its content chosen on the basis of the "social studies" objectives; and made an integral portion of the "social studies" program.

43. A lesser portion of one's literature and general reading reveals nature and is better classified with the natural sciences.

44. The concrete levels of one's experiences, whether the contacts be direct or indirect, are to be the bases of one's generalizations. Except therefore as the literature is of dream or music type, it provides concreteness for generalization purposes.

45. The teacher of literature should conceive himself to be primarily a teacher of human nature, human psychology, human forces and influences and relations. These

things literature presents — in the concrete. It is his responsibility to see that literature is chosen which presents them well; and that they are used for generalizations.

46. The test of the educational benefits of reading must be the degree to which it has helped one to achieve the objectives of his training.

47. General training in literature in our high schools is not for the vocational training of writers.

48. Only those are to be trained for vocational production in this field who have definitely chosen it as their work; whom studies of capacity show to be fitted for it; and who are capable of a large degree of self-direction in achieving the skills and understanding.

49. Training for amateur literary production is to be given only to those of proven capacity, aptitude, and industry — and who require no great amount of teacher-effort and assistance.

50. Teachers can easily discover those pupils who have keen enjoyment of literature and who are therefore responsive to its beauties and other qualities. In the general written work of the school they can also discover pupils whose natural endowment appears to fit them for amateur or professional literary production. An elaborate technique probably is not necessary for the discovery of those who can profit from training for amateur literary activity.

One cannot be dogmatic relative to matters in this complex and difficult field. The above statement of general assumptions and principles is merely suggestive of a pattern to be employed by the curriculum-making group. They should have such a platform. They should draw it up for themselves. It should include nothing but what they can themselves approve.

Should they employ the foregoing suggestions as starting-point, they should revise the series until it contains nothing but what they approve; and until it omits nothing which they think should be included. A few further suggestions should be made:

1. Each of the assumptions should be drawn with a clear view of the ways in which literature and general reading function, or should function, in the general community life. Special effort should be made to avoid the obsessions of the literary technician.

2. In general education, we are training the "consumer" of literature, not the "producer." He is developing vision, appreciations, and other things that result from the *use* of literature, not the understanding and skill needed for producing it. The latter is specialized vocational training with which the general training has nothing to do beyond laying the foundations.

3. The statements should be definite and clear. They are intended for guidance in making specific decisions. They cannot properly serve if they are unduly general and vague.

4. There should be no evasions merely because finality is unattainable at present. One should use the best evidence at one's disposal and take the position which is supported by the burden of the evidence. As an educational investigator, his mind may remain in a state of suspended judgment; but as a practitioner he must take a position and do what appears to be best. If we did nothing where investiga-

tors must yet retain a suspended judgment, there would be little doing in our schools.

5. The assumptions chosen should represent not the judgments of an individual but rather of a large group of professional workers who have thoughtfully examined the problems and the evidence.

6. Both the specialists in this field of literature and the general educationists should be concerned in formulating the general assumptions. The specialist is needed because of his intensive vision and understanding; the general educationist because of the width and perspective of his educational vision and judgment. In the main the specialist will propose; the generalist will make ultimate decisions.

7. After the basic assumptions and principles are once formulated and agreed upon, they should be continuously used for guidance. Whatever they direct should be done, if practical conditions will permit. Whatever they forbid should be omitted from the program, whatever be our traditional professional thought and habit.

Use of the principles for guidance does not call for undue suddenness in the introduction of new things or even in the elimination of undesirable ones. Speed of progress must necessarily be adapted to the nature of conditions. Often it must be slow. It should be only as rapid as practical conditions make advisable.

The Objectives

The list of personal qualities and abilities presented

in Chapter II was drawn up without reference to school subjects or departments. It is as complete as we have been able to make it. It probably includes those abilities and qualities which should be developed through the use of literature and general reading. Our task then is to discover those which can be achieved through the use or study of literature. If one has drawn up a different list for his own use, he will use his own list for the purpose.

As one looks them over, it seems that general reading, including literature, can serve in some measure in the case of most of them. It is particularly serviceable however in the case of certain ones. From Chapter II, we select the following, retaining the same numbers, as major objectives of the literature and general reading:

OBJECTIVES OF LITERATURE AND GENERAL READING

402. Ability, disposition, and habit of abundant and diversified *reading* as a means of enjoyable and fruitful *indirect observation* of men, things, and affairs; of *vicarious participation* in those affairs; and of entering into the *thoughts* and *moods* of others.

501. A proportioned and emotionalized intellectual apprehension such as one's natural capacities will permit, of the realities which make up the world of man's life.
   (*a*) Man; human nature; diversities of human nature.
   (*b*) Man's activities and affairs in their diverse fields and forms.
   (*c*) Man's institutions.
   (*d*) The territorial or regional groups that make up the local community, the state, the nation, and the world. Their situations and affairs.

(*e*) The specialized or functional groups — economic, political, religious, and the like — together with their special situations, activities, duties, rights, and relationships.

(*f*) Man's geographical habitat.

(*g*) The development of man and of his nature, habitat, institutions, manners, and customs, specialized groupings, etc., as revealed in biology and history.

(*h*) The world of plant life.

(*i*) The world of animal life.

(*j*) The world of chemical phenomena.

(*k*) The world of physical phenomena.

(*l*) The geological world.

(*m*) The astronomical world.

(*n*) The world of number, quantity, magnitude.

(*o*) The world of sound and music.

(*p*) The world of language and literature.

(*q*) The world of form, color, visual art.

(*r*) Man's inventions and creations.

(*s*) The world in composite forms: woods, hills, streams, lakes, oceans, farms, cities, and the like.

(*t*) The world of myth, legend, folklore, fairy tale — realities of a sort even though they are but created in man's imagination.

In each field: awakened interests; tendencies to attention; appreciations; normal emotional reactions.

201. Ability to think, feel, act, and react as an efficient, intelligent, sympathetic, and loyal member of the large social group — that group that is prior to differentiations and within which social differentiation occurs. Large-group or citizenship consciousness. Sense of membership in the total social group, rather than in some special class. Large-group local consciousness when dealing with local problems; large-group state consciousness when dealing with state responsibilities, large-group na-

tional consciousness when dealing with national matters; large-group world-consciousness when dealing with mankind's responsibilities for world coöperation and management.

202. Ability and disposition to view the specialized or functional groups and agencies, not as independent entities, but as service arms of the general social whole, without which they could not exist.

203. The ability of the citizen to do his individual share in performing those social functions for which all citizens are equally responsible in the establishment, organization, maintenance, protection, oversight, and control of the specialized groups and agencies into which society is differentiated for effectiveness of action.

213. An understanding and appreciation of the social-service labors and sacrifices which have brought our institutions and social procedures to their present high levels of development.

601. A sense of the brotherhood of man. A full sense of membership in the large or total social group. Large-group consciousness. A sense of human interdependency, of community of nature, of origin, of vicissitudes, and of destiny. Tendencies to action and reaction which are inherent in the large-group consciousness.

602. Ability to see one's environment, the near and the far, the personal and the impersonal, *sub specie æternitatis*, as a vast and restless sea of forces and phenomena, infinite in extent, subtlety, and complexity. Ability to see and realize one's interrelatedness with and within this boundless environment. (The vision provided by science — physical, biological, psychological, social.)

603. Ability to catch for one's self such glimpses as are permitted to finite vision of the Being which actuates the universe as revealed in natural manifestations, in living creatures, in mankind, in man's highest examples, in the record of man's thought and action and aspiration as presented in history, literature, art, science, philosophy, and in man's religious literatures.

604. Ability to participate as fully and abundantly as one's original nature will permit in religious and philosophic thought of the type characteristic of man at his best and highest.

605. Ability, habit, and disposition to follow the leadership of the world's Men of Vision.

301. Ability and disposition to talk and act in those sympathetic, tactful, and human ways that are both most agreeable and also most effective in the conduct of one's relations with one's associates; and conversely, to avoid the many things disagreeable to others.

215. Ability wisely to choose a specialized occupation in which one can give good service to one's self, to one's family, and to society.

109. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical functioning.

12. Ability to read the written or printed expression of others with proper ease, speed, and comprehension.

13. Ability to use dictionary, encyclopædia, atlas, handbooks, card catalogues, reader's guides, indexes, and other library and reference helps in finding facts or materials wanted.

We are not recommending that the practical curriculum-maker accept these as the objectives of this training. We present them by way of suggesting the *type of procedure* which he should probably employ. He will use his own comprehensive series of educational objectives as his starting-point. In it he will discover those for which he would employ the literature and general reading.

After the objectives are decided upon, *they should be used*. In time, this suggestion will be superfluous. In

our present stage of educational development, however, we are not accustomed to using specific and definite objectives for guidance in formulating programs of education. Our professional habits are not yet formed.

The curriculum-maker should be quite certain that no objectives are included except what can be approved and used. Each one should have its due influence in shaping the program.

There will be a natural tendency to shun those objectives which look toward largeness of vision, understanding, and good-will. These latter seem alien to human nature in its natural state. Man's natural spiritual stature appears to be more limited than he likes to confess. He is seriously earthbound; and is pretty uncomfortable except as he is near the solid and immediate things of earth. The high places tend to be vertiginous even for cultivated men.

Because of this tendency of weak human nature to shy from things large and humanistic, we recommend that these very things be studied specially carefully by way of discovering their probable validity. If they are valid, they point to the most serious responsibilities resting upon our profession.

Pupil Activities and Experiences

The curriculum for any given pupil is the total series of activities and experiences which enable him to achieve his objectives. With the objectives before him, and with his general principles and assumptions for his guidance, the curriculum-maker will next draw

up a statement of the general types of activities and experiences to be employed. He will have a statement somewhat like that of which the following is a beginning:

1. The pupil will read abundantly relative to all important fields of human experience.
2. He will widely observe mankind, human affairs, and the background of those affairs indirectly through reading.
3. He will participate abundantly in human affairs of all kinds and in all lands and ages, in vicarious ways through reading.
4. He will associate with others whose readings cover the wide fields which he ought to explore.
5. He will often talk over with juvenile and mature associates his reading experiences.
6. He will exercise a large degree of self-direction in his reading: materials, times, places, quantities, etc.
7. He will listen to and heed the advice of teachers, parents, and other mature associates relative to things to be read.
8. For part of his reading he will follow the directions of teachers and parents.
9. He will read silently and relatively rapidly most of the time.
10. Some selections he will read repeatedly.
11. He will listen to the oral reading of others.
12. He will read orally for mastery of mechanics.
13. He will read orally at times for emotional intensification.
14. He will formulate his criteria of judgment relative to the worths of readings of various kinds.

15. He will judge of the relative values of different types of things which he reads.
16. He will cultivate a taste for readings which he considers, in the light of his own criteria, to be of most worth.
17. He will keep a classified record of his readings.
18. He will read such newspapers and magazines as are fitted to his degree of maturity.
19. He will frequently read things which demand all his powers to view matters upon a general level — as far above the level of the immediate and the concrete as his degree of maturity and general capacity will permit.
20. He will utilize experiences of his reading for arriving at generalizations in many fields.
21. He will, etc., etc.

The curriculum-making group will considerably extend this series of general types of pupil activities and experiences in this field. Yet it should not be extended too far, otherwise it enters into so much detail as to become unwieldy for its practical purposes.

Into the next logical step, we cannot here go because of the limitations of space. This is to lay out the series of detailed pupil activities and experiences for each of the grades. The curriculum-making group will take the series of *types* of pupil activities, and plan the exact things to be done through all the weeks and months of the first grade; then through the second grade; and so on through each of the grades of general education to the end of senior high school or junior college. These statements will present lists of readings to be used; lists of problems to be solved on the basis of the readings; and whatever else will enter into the finished detailed curriculum.

CHAPTER VII

THE SOCIAL STUDIES

A GOOD plumber is the man who can perform skillfully the one hundred and sixty kinds of jobs which analysis shows the good plumber must perform in the course of his labors. A good citizen, *qua* citizen, is one who can perform sufficiently well the fifty, five hundred, or five thousand things which the good citizen is called upon by his social situation to perform.

In the case of the plumber we know what the jobs are and can set them down in a list that can be accepted by all good plumbers. In the case of the citizen, *qua* citizen, we do not know what the things are that he should do. We do not know whether they are few or many. We cannot set them down in a list that will be accepted by all who regard themselves as good citizens.

In case we do not have the one hundred and sixty jobs of the plumbing trade before us, we know where to go to find out what they are. We have only to find the best plumbers at their work and list all of the kinds of activities which we see them performing. In the case of the good citizen, however, we do not even know where to go to observe him in action and thus to find out what his activities are.

We say that the good citizen is the man who from his own choice and through his self-direction is diligent

in doing the things which promote the welfare of his social group. This looks simple and obvious enough until we begin to make our ideas specific. What is the social group the welfare of which is to be promoted? The citizen appears to be a member of many groups. He is a member of a family group. As a vocationist, he is a member of the labor union, employer's union or commercial organization. In his religion, he is a member of a church organization. He claims allegiance to a certain political party. He is a member of a fraternal organization, and calls its members brothers. He is a unit in the general local community, be it city, village, or rural township; a member of the state group; a member of the national group. As a human being, he belongs to the world-group called humanity.

It seems not to be enough to say that he should actively promote the welfare of each of the many groups of which he is a member. There appears to be serious conflict of interests among the several groups. It appears at least that intensive loyalty and vigorous support of one of them is frequently contrary to the interests of a different group of which he is a member. There is no agreement as to how he should distribute his loyalties.

A second baffling question is, In what manner is the social welfare of the several groups to be promoted? The farmers have one program; union labor a second; business men's organizations a third; social workers a fourth; and politicians of different stripe have an endless number of conflicting suggestions. There is end-

less clash of interests, with corresponding disagreement as to procedures. What is white to one is black to his neighbor.

A third question is, In promoting the general welfare, to what extent should there be conscious and systematic control of individuals and special social groups and agencies by society at large, and to what extent should this control be left to the unconscious processes of society? Here again we have all shades of judgment from those who would leave the agencies practically autonomous and self-directing to those who would develop very elaborate and complete systems of governmental direction and control.

Inability to answer these and other fundamental questions, makes it impossible in the immediate present to make scientific analysis of the citizen's functions on the basis of which to formulate educational procedures. The best we can do is to formulate a working hypothesis. Even this is endlessly difficult. And yet the curriculum-maker can do nothing until he has either the facts as to what the citizen should do or a substitute in the form of a working hypothesis. Since it is impossible at present to have the facts, the only possibility is a working hypothesis. This naturally should be the best formulation which can be made on the basis of all of the social, economic, and political science that we have.

In the present mood of our profession, the word hypothesis is under suspicion. We want nothing less reliable than science. This of course is a commendable

attitude and it should fire us with professional zeal in promoting that scientific research which will give us the science. In the meantime, however, we must frankly recognize that we do not have such science; and recognize further that the best hypothesis is, as a matter of fact, the beginnings of our science. In this field, we are only in the beginnings.

We should recognize frankly that every textbook of citizenship training that we now have is built, not on facts as to the activities of the good citizen, but on the working hypothesis of the writer. Every course of study in this field drawn up by practical superintendents, principals, and teachers is built upon their working hypothesis and not upon survey-ascertained facts. There never has been such a survey made. We have not yet the technique for making it.

The practical question therefore is not whether we shall use science or hypothesis; it is rather a problem of what is the best hypothesis. While the textbook and curriculum-makers have always employed hypothesis as their starting-point, yet it seems that their hypotheses have usually been incomplete. Rarely have they defined the citizen's exact functions as their starting-point. We are not suggesting any new task but only that the usual one be performed more consciously, systematically, and completely.

Those who say that only scientific analyses are permissible appear to assume that citizenship training should be postponed until the scientific activity-analyses have given us the finalities. There is no

promise of any such thing in our generation. And what is more, the practical world is not operated by the method of postponement of its labors until science is complete. It uses what is available until there is something better. Nine tenths of the practical work of the world, says Huxley, is guided by hypothesis rather than by science. It must be so, so long as the science has not been established.

It is probable that any experienced superintendent is as well qualified as the writer to formulate a working hypothesis as to the citizen's functions. In any case the responsibility actually rests upon the superintendent and his associates to make decision. This task they cannot evade, except as they evade the entire responsibility.

The hypothesis accepted by the writer is indicated by the objectives which he here presents for illustration and suggestion. Since it is not expected that any school system will adopt this series, there is no need here to explain it in detail. The statement is clear enough to show the kind of objectives which any curriculum-making group should probably formulate for itself. In the nature of the case, all that is possible at present is thus to lay out the goals in broad outline. When reasonable agreement is reached on this preliminary level, then the time will have come for more exact analyses.

The following are selected from the comprehensive series of abilities and bear the same numbers:

Objectives of the Social Studies

201. Ability to think, feel, act, and react as an efficient, intelligent, sympathetic, and loyal member of the large social group — that group that is prior to differentiation and within which social differentiation occurs. Large-group or citizenship consciousness. Sense of membership in the total social group, rather than in some special class. Large-group local consciousness when dealing with local problems; large-group state consciousness when dealing with state responsibilities; large-group national consciousness when dealing with national matters; large-group world-consciousness when dealing with mankind's responsibilities for world coöperation and management.

202. Ability and disposition to view the specialized or functional groups and agencies, not as independent entities, but as service arms of the general social whole, without which they could not exist.

203. The ability of the citizen to do his individual share in performing those social functions for which all citizens are equally responsible in the establishment, organization, maintenance, protection, oversight, and control of the specialized groups and agencies into which society is differentiated for effectiveness of action. The young citizen-in-training is to acquire those abilities which, when adulthood is reached, will enable him to perform the following things in connection with the several specialized social agencies:

(*a*) Sharing fully in an informed and impelling public opinion, which looks to the general welfare in its control of each service agency.

(*b*) Setting up in public opinion and maintaining the standards of results to be achieved by each service agency.

(*c*) Seeing that each service agency aims at the standards of results that are sanctioned by public opinion.

(*d*) Seeing that the service agency employs procedures which are effective in producing the desired results and which are economical in social costs.

(*e*) Seeing that the material working conditions necessary for the most effective and economical procedures are supplied.

(*f*) Seeing that each service agency is provided with personnel and organization of the kind required by the procedures to be employed; and properly rewarded.

(*g*) Directly or indirectly selecting or approving the selection of the personnel of the agency.

(*h*) Supplying the funds necessary for the efficient, and in all ways proper, conduct of the agency.

(*i*) Currently or periodically examining, directly or through publicity reports, or both, into the results achieved by the agency, and the degree of economy employed.

(*j*) Where results achieved and degree of economy employed comply with standards of expectation, approving and properly rewarding the labors of those who have thus given good service.

(*k*) Where results do not reach the standards of expectation, or where there has been waste, finding the causes of the deficiency, and removing them as expeditiously as practicable.

204. Ability to organize and use social facts effectively in arriving at conclusions.

205. The ability to use general principles in analyzing and considering economic, political, and other social problems.

206. Ability to protect one's self from social, economic, and political fallacies, illusions, misrepresentations, petty-mindedness, fragmentary-mindedness, sentimentality, selfish prejudices, and the like, through one's continual reliance upon facts and principles.

207. Ability to discern the character and the extent of one's

social obligations and duties in the amount and character of things done for one by other individuals, groups, and agencies.

208. Ability to discern one's individual rights in the quantity of one's services to the general group. Ability to read one's rights as things earned.

209. Ability to see social relations so clearly as to discern the *duties* of others, individuals and groups, within the social whole.

210. Ability to see social relations so clearly as to discern the *rights* of others within the social whole.

211. Disposition of the citizen as consumer to avoid waste.

212. A sufficient knowledge of the laws which one is expected to obey.

213. An understanding and appreciation of the social-service labors and sacrifices which have brought our institutions and social procedures to their present high levels of development.

214. Ability to organize and express one's ideas clearly and effectively in the discussion, formal or informal, of social problems.

215. Ability wisely to choose a specialized occupation in which one can give good service to one's self, to one's family, and to society.

301. Ability and disposition to talk and act in those sympathetic, tactful, and human ways that are both most agreeable and also most effective in the conduct of one's relations with one's associates; and conversely, to avoid the many things disagreeable to others.

401. Ability, disposition, and habit of diversified *observation* of men, things, and affairs as an enjoyable and fruitful leisure occupation.

402. Ability, disposition, and habit of abundant and diversified *reading* as a means of enjoyable and fruitful *indirect observation* of men, things, and affairs; of *vicarious par-*

ticipation in those affairs; and of entering into the thoughts and moods of others.

408. Ability to participate in the more formal public discussion of matters of current interest as an enjoyable and fruitful spare-time occupation.

501. A proportioned intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*a*) Man; human nature; diversities of human nature.

(*b*) Man's activities and affairs in their diverse fields and forms.

(*c*) Man's institutions.

(*d*) The territorial or regional groups that make up the local community, the state, the nation, the world. Their situations and affairs.

(*e*) The specialized or functional groups — economic, political, religious, and the like — together with their special situations, activities, duties, rights, and relationships.

(*f*) Man's geographical habitat.

(*g*) The development of man and of his nature, habitat, institutions, manners and customs, specialized groupings, etc., as revealed in biology and history.

(*r*) Man's inventions and creations.

(*t*) The world of myth, legend, folklore, fairy tale — realities of a sort even though they are but created in man's imagination.

601. A sense of the brotherhood of man. A full sense of membership in the large or total social group. Large-group consciousness. A sense of human interdependency, of community of nature, of origin, of vicissitudes, and of destiny. Tendencies to action and reaction which are inherent in the large-group consciousness.

602. Ability to see one's environment, the near and the far, the personal and the impersonal, *sub specie æternitatis*, as a vast and restless sea of forces and phenomena, infinite in extent, subtlety, and complexity. Ability to

see and realize one's interrelatedness with and within this boundless environment. (The vision provided by science — physical, biological, psychological, social.)

603. Ability to catch for one's self such glimpses as are permitted to finite vision of the Being which actuates the universe as revealed in natural manifestations, in living creatures, in mankind, in man's highest examples, in the record of man's thought and action and aspiration as presented in history, literature, art, science, philosophy, and in man's religious literatures.

604. Ability to participate as fully and abundantly as one's original nature will permit in religious and philosophic thought of the type characteristic of man at his best and highest.

605. Ability, habit, and disposition to follow the leadership of the world's Men of Vision.

12. Ability to read the written or printed expression of others with proper ease, speed, and comprehension.

13. Ability to use dictionary, encyclopædia, atlas, handbooks, card catalogues, reader's guides, indexes, and other library and reference helps in finding facts or materials wanted.

14. Ability to read and interpret facts expressed by commonly used types of graphs, diagrams, and statistical tables.

15. Ability to express facts by means of graphs, diagrams, and statistical tables.

16. Ability to use maps with ease and understanding.

Guiding Principles and Assumptions

This is the most complex and difficult field of education. It is probably also our largest educational responsibility. If there are general principles that can serve for guidance, they should be found, formulated,

and used as a mariner uses his charts. Where it is not yet possible to have accepted principles, then obviously there should be found and formulated the best practicable working hypotheses and assumptions. In fields of uncertainty, for guidance, the best thought is always safer than no thought; and definite formulations better than vague unformulated attitudes and opinions. We present the following series as examples of the *kinds* of guiding principles and assumptions needed. These series have grown up out of the practical judgments of many individuals, and have undergone the test of practical use in curriculum-making. They are still, however, merely tentative and illustrative. Each curriculum-making group will formulate its own series.

Social Studies in General

1. The several social studies aim at objectives in the same field. In large measure they aim at the same objectives.

2. The power to think and judge relative to social matters requires fullness of experience with social matters in connection with which one thinks and judges while in vital contact with the actual social forces, phenomena and problems.

3. Power to act and react in socially desirable ways is to be developed by acting and reacting in socially desirable ways.

4. Power to coöperate with others in desirable ways in carrying forward social movements is to be developed by coöperating with others in desirable ways in forwarding social movements.

5. Power to participate in proper ways in general social,

civic, and economic control is to be developed by participating in proper ways in general social, civic, and economic control.

6. Power to adjust one's self to social forces, influences, institutions, manners, customs, laws, etc., is to be developed by practical experience in adjusting one's self to them.

7. Power to function in any one of the several ways indicated in the objectives, is to be accomplished by actual functioning in those ways. Usually there needs to be certain conscious preparation for this functioning; but preparation has no significance except as it is simply the preparatory portion of the total process.

8. Back of all right social action, there must be right social attitudes, valuations, appreciations, and desires. Preparation for right functioning must take adequate care of these basic qualities of mind.

9. Back of all right action and reaction there must be knowledge of the social forces, movements, relations, causes, consequences, and the like. This knowledge is the indispensable guide to right action.

10. One comes to know and to appreciate one's own immediate society by living the life of that society in as varied a way as practicable: participating in its activities; directly observing the activities of others; listening to accounts of others' activities; reading concerning the doings of others.

11. One comes to know and appreciate the larger social life of state and nation by entering into the active life of state and nation: participation, observation, conversation, pictures, and readings.

12. One comes to know and to appreciate any specialized functional group or agency by entering into the experiences of that group or agency: participation, observation, conversation, pictures, and readings.

13. One comes to know and to appreciate any country or people by living the life of that country or people. Natu-

rally actual life in the country is most effective; but since this is usually impossible and since even direct observation is usually excluded, one must mainly or wholly depend upon the vicarious participation and indirect observation of pictures and reading.

14. One develops an interest in social groups, functional and territorial, and in the affairs and problems of such groups by participating directly or indirectly in the affairs of those social groups. Lacking such experiences, one remains oblivious and indifferent.

15. In one's social studies, one will relive reconstructed human experiences in all important regions and countries of the earth, and throughout the entire historical period; with greatest emphasis upon the near in both time and space.

16. One will in the same way enter into the experiences of all major functional groups and agencies.

17. Individuals should so enter into the experiences of social groups as to become familiar with their composition, social situations and relationships, purposes, ambitions, motivating forces, duties, rights, responsibilities, services, needs, etc.

18. To understand and appreciate the multitude of complex factors which make up the life of any social group — local, state, nation, family of nations or specialized functional group — it is usually well for one to live the life of the group from its simple beginnings down to the present; this calls for the *history* of social groups, institutions, and agencies.

19. Rightly to know and appreciate human society, one must have that revelation of concrete personal and intimate matters provided by *literature* in the narrower sense of the term. Literature for general social education has its special revelation to make; its content should be determined from this point of view.

20. Even though the literature be directed by a separate department, its program should be formulated mainly on the basis of social studies objectives.

21. Rightly to know and to appreciate the non-human background of man's experience the world over, one must enter actually and vicariously into man's active life the world over and thus come to know man's natural environment through dealing with it. By using the opportunities which it provides, by yielding to the limitations which it imposes, by controlling and being controlled by it, and the like, one comes actually to know the *geography* of man's earthly habitat.

22. One comes to know and to appreciate the economic forces, mechanisms, institutions, customs, laws, arrangements, tensions, conflicts, and the like, by reliving the experiences of social groups of all sorts in which their economic affairs are truly and clearly revealed as a portion of the total experience.

23. To understand and appreciate the *political* or *civic* forces, mechanisms, institutions, and the like, as one relives the total life of social groups of all kinds, he must enter in a balanced way into their political or civic experiences.

24. To understand and appreciate *man's psychology*, individual and social, one needs to enter into human experiences, actually or vicariously, of all kinds and under all kinds of circumstances.

25. Rightly to understand and appreciate man's *moral* sanctions and tabus, one needs to enter fully into human experiences actually and vicariously, within situations where those sanctions and tabus are actually operative.

26. Rightly to know and appreciate man's *religious* life and institutions, customs, aspirations, and the like, one needs to live actually and to relive vicariously man's religious experiences.

27. In entering into man's experiences, past and present, the world over, it is obvious that a very large part of it must be of the vicarious or indirect type. For this the reconstruction of experience should be adequate for the purpose. It should be for the one who is reliving it as nearly like the original experiences as practicable.

The presentation should comply with literary canons. It should be literature. It should make the past and distant live again. It should not be a mere catalogue of dead facts, however well classified and arranged.

28. The concrete presentations of human life and experience in history, biography, travels, literature, geography, and the like are to be used for experiences. They are not to be memorized.

29. As one relives the experiences of a nation or other social group, he will read the narrative relatively rapidly. He will read for the experiences. He will not try to memorize the details.

30. Where experiences are vital and abundant, a normal residue of knowledge will remain in the memory.

31. The motive which impels one to read the concrete reconstructions of social affairs should be delight in the experience itself. It should be experience upon the foundational or play-level.

32. Reading as social experience should be an enjoyable leisure occupation during youth in order that it may continue as an enjoyable leisure occupation throughout life.

33. Didactic presentations to which students have to be driven are unsuitable means of social experience and growth.

34. The usual social studies textbook is too brief and general to provide the concreteness needed for well-reconstructed human experience.

35. Actual living of group life involves all the factors in composite form. It is impossible to present the historical aspect without the geographical; the economic without the geographic and the historical; the civic without the economic and geographical. All are threads in the fabric of experience and each is relatively meaningless except as it is part of the entire fabric. The systematic studies consist of analyzing out the factors. The latter must, however, first be known in their natural setting

before they can be known for the special purposes of the particular studies.

36. Living the life of the group gives one the concrete materials of thought; history, in the concrete; geography, in the concrete; and likewise economics, political science, human biology, and psychology. Out of the concrete experiences with groups should then grow up generalizations and principles which should be formulated and stated as economic principles, political principles, geographical principles, etc. This, however, is the culmination of the process; and comes after the concrete experiences.

37. The general is presented along with the concrete inasmuch as it does not exist except in the concrete. Fullness of concrete experience is the first step therefore in apprehending the general.

38. General principles will not be formulated at any one stage in the studies; they will be gradually formulated as the basic experience accumulates, and as pupils become sufficiently mature.

39. Although the general exists in the concrete, in proportion as one is mentally immature, one can see the concrete but not the general. As he matures he ought to be able to see the general with increasing clearness. The readings, therefore, for the ascending scale of maturity should increasingly reveal the general.

40. Most generalizations should *grow* up out of the concrete experiences; usually slowly. The responsibility of education is to provide the conditions of full healthy *growth*. It will not try to manufacture them quickly and artificially.

41. Where there is fullness and sufficiency of concrete experiences, generalization can, in part, be left to nature's method of assimilating experiences: One's memory continually drops out the deciduous concrete details and retains the general.

42. Generalizations will also be arrived at through analyz-

ing the concrete matters and discovering the sequences, relationships, common elements, fundamental relationships, and the like.

43. In large measure the generalizations will result from problem-solving. There will be numerous problems for developing geographical generalizations; economic problems for developing the economic generalizations; civic problems for developing the civic generalizations; and similarly, numerous problems wherever generalizations are to be arrived at.

44. After generalizations are derived, they will be employed so frequently in the interpretation of further social phenomena as to fix them sufficiently in memory.

45. There should be much discussion of social matters. This should not be a mere memoriter and thoughtless question-and-answer reproduction of verbal textbook facts; it should be group problem-solving by way of arriving at generalizations and principles; and by way of applying previously formulated principles to new situations.

46. General principles cannot be learned from mere verbal presentation of them in their general form prior to the concrete experiences. Merely to memorize such verbal statements of principles is not to memorize the principles themselves. They must develop out of experiences.

47. As general principles are formulated out of the concrete experiences, general readings in principles of economics can be of assistance in organizing economic generalizations; in principles of political science, for generalizations in that field; in principles of geography, for generalizing the geographic matters; and the like. Such books, however, must be aids, not bases, of study.

48. Social education will employ the method of "growth through vital experiences" rather than growth through systematic memorizing of a moderate quantity of facts.

49. The social experiences needed exist upon two levels:

(1) the level of intellectual and social play; (2) the level of work.

50. Play experiences provide the broad, rich background of social understanding, interests, attitudes, sympathies and antipathies, likes and dislikes, sense of proportion, social vision and perspective, etc.

51. Work experiences of civic or economic type are to develop skill, forcefulness, sense of responsibility, etc., in performing the actual civic or economic functions of the citizen.

52. The background training of the play-level necessarily precedes the specific training of the work-level. This does not mean that one will be finished before the other begins. The two will run alongside, the one continually laying the foundations for the other.

53. The foundational or play experiences should be clearly distinguished from the functional or work experiences in order that each may be made fully and rightly to serve its special purposes.

54. Power to perform the *specific* functions of the efficient citizen is mainly to be developed by actual functioning upon the work level.

55. Activities cannot be genuinely upon the work level except as they involve felt sense of responsibility. This is possible only where there is actual responsibility.

56. On the work-level the tasks are to be performed with all possible exactness and thoroughness.

57. The social education should be a matter of continuous growth through all the years of one's education; and with the expectation that the growth is to continue after one's schooling is over.

58. In the social analyses, the problem-solving, the generalizations, and the like, clearness and facility of thinking go hand in hand with clearness, accuracy, and facility of expression. The teacher of social studies must concern

himself with both in order adequately to care for the things of his special field.

59. Habits of social participation, social observation, general social reading, and discussion of social problems, and in general the performance of the citizen's functions should be formed in youth in ways and under conditions in which they are expected later to function during adulthood.

History

1. History as fully and vividly as literature — though not in so personal a way — will present reconstructions in imagination of the experiences of nations, peoples, institutions, and social groups.

2. History for the general training is to reconstruct the things and experiences as they were in their living forms; not merely to present the fragments that have been recovered from the débris of the past.

3. History is to be used primarily as a means of social experience: indirect observation of, or vicarious participation in, man's activities in different lands and ages.

4. The concrete historical experiences are not to be consciously memorized. They are to be *lived*. A mental residuum then grows up which is normal and healthy. If the experiences are abundant and vivid, memories will be normally abundant.

5. The primary experience in using history for general training is reading it — abundantly — with enjoyment — under normal reading conditions.

6. The experiences demand an abundance of historical reading materials.

7. Historical readings should always be accompanied by a sufficiency of good maps.

8. Pictures should be abundantly employed for developing the basic imagery required for historical reconstructions.

9. The historical reconstructions will reveal the operative factors of every kind: geographical, biological, psychological, economic, political, and religious.

10. The matters revealed by history will be studied for the purpose of discerning the forces and influences at work in the world, and the laws governing the action of those forces. The general is to be discovered within the concrete.

11. The history should enable one to see current events not as things new but only as the most recent surface manifestations of forces and influences which have been operative throughout man's history.

12. A knowledge of general historical movements will remain in memory as the deciduous concrete facts sink naturally into oblivion; especially if the discussion and problem-solving has assisted in making clear the general movements.

13. The generalizations of history must grow up gradually out of concrete, historical experiences. They cannot be given over merely by formulating them in verbal terms, and instilling these verbalities into the minds of the students. In outward form such generalizations appear to be genuine; but in the mind of the learner they lack the actual substance.

14. It is a matter of relative indifference whether one remembers this or that specific fact of history; but that he have the intellectual and social growth which results from having abundantly relived human history is not a matter of indifference.

15. The growth in historical-mindedness should be continuous throughout all the years of one's education.

16. The ability to do elementary historical research is not a valid objective for public school students.

17. The technique of training the professional historian must not be permitted to influence the technique of using history for the purposes of general education.

Geography

1. One will best learn the lands of the earth by living in those lands. Since this is usually impossible, one will employ the nearest substitute, namely, living vicariously in these lands by reading the history, literature, travels, current news and whatever else adequately reconstructs life and experience in the several regions of the earth.

2. One will learn the peoples of the earth, their customs, institutions, industries, commerce, opportunities, limitations, standard of living, and the rest, by indirectly observing and by vicariously living the lives of these various peoples in concrete reading.

3. The way to learn the stage upon which the human drama is enacted is to view the drama with an understanding of all of the controlling and conditioning factors. The stage will be sufficiently seen; and under circstances that give it meaning. If any portion needs to be seen specially clearly and known specially well, it is all the more necessary, that it be seen in relation to the drama.

4. Place geography is best mastered by abundantly seeing it as the *place of human action.*

5. Matters of topography, climate, natural resources, and the like, will be learned through viewing them as stage, background, opportunity, and limitation of human action.

6. Rightly to see and to know the geographic forces, influences, and controls that are operative in human affairs, one must see them in full operation in human affairs. As history, literature, and travels reconstruct human experiences, they reveal the geographic controls *in operation.*

7. For the most part, the geographic training will be cared for as a factor in the general social training; not as a separate study.

8. A certain amount of earth-study will also be included in the physical science.

9. All historical and travel readings — and frequently literature — should be accompanied by adequate series of maps and pictures.

10. Individuals can sufficiently master maps through the process of using them.

11. Pictures should be abundantly used by way of giving one the basic imagery necessary for geographical reconstructions.

12. The geographical background of human experience is not a thing to be consciously memorized in its details any more than the stage at the theater is to be memorized. It is a thing to be experienced, along with the action. Geography is, therefore, not a study to be memorized. Maps are not to be memorized. Exports and imports are not to be memorized. Simply, experiences are to be so abundant and vivid that the necessary understanding grows up without one's having to memorize the things. What belongs to memory will grow up in the memory; what does not belong there will drop out normally as deciduous and non-essential. To live abundantly in the world will give one the basic knowledge which one needs of the world.

13. The social studies will take adequate care of the geographic generalizations. In large measure, these will result from an abundant problem-solving on the basis of the concrete experiences. The problem-solving will probably be the major feature of geographic class-work or discussion.

14. Geographical generalizations cannot be learned through merely memorizing abstract verbal presentations of them. They are normally learned only when crystallized out of concrete experiences.

15. After one has generalized one's concrete experiences, at least in part, one is in a position to use with profit a general treatise on the principles of geography. It can be

an aid in organizing what one already knows. It will not require much time.

16. The geographical experiences and training should continue throughout all the years of one's general education, since it is an integral portion of one's general social training.

Economics

1. Full economic understanding is needed by all men and women. It should therefore be a portion of the general training of all citizens.

2. The experiences of most groups, territorial or functional, are not adequately revealed if the economic aspects are not made clear. The abundant concrete readings should clearly reveal the economic aspects of group life.

3. The concrete observations and readings of the general social studies will provide the basic experiences for economic analyses and generalizations. Experiences which care for the economic as one of the factors will therefore be continuous from primary school to the end of one's general education.

4. To be rightly seen, the economic factors need to be seen *in situ* within the concrete situations.

5. After pupils have had concrete economic experiences, they can both generalize for themselves, and understand the generalizations of others.

6. Largely through economic problem-solving, the students will arrive at the economic principles.

7. The generalizations of an economic nature should slowly *grow* up out of fundamental concrete experiences; they should not be grafted on in merely verbal ways. Such grafts bear only the semblance of generalizations. They lack the substance.

8. The generalizing of economic matters of simple type should begin early; and through the later grades of jun-

ior high school, senior high school, and college it should advance to generalizations that are ever more comprehensive and fundamental. This growth should be continuous through all these years; not a matter of a short concentrated course in "economics."

9. For the most part, the economic training will be taken care of as a factor in the general social training, not as a separate study.

10. Books that present in the abstract the "principles" of economics cannot be the bases of the training. They can be serviceable for organizing one's generalizations, *after* one has abundantly seen, for himself, the general within the concrete.

11. Much of the concrete economic material should be quantitatively exact and in mathematical terms. Such material is to be used for analyses, problem-solving, and generalizations. It is not to be "learned."

12. Economic surveys, together with the fact-organization and presentation, done by the students for responsible community purposes, should provide much experience on the work level.

Civics

1. Citizenship training should be continuous and uninterrupted throughout the entire period of general or unspecialized education.

2. The basic civic training is the concrete experience of living, or indirectly reliving, human experiences in which the forces of social coördination and control are in full operation. Here he can see them *in situ*, and can know them for what they are.

3. After pupils have had concrete experiences in the field of political forces, relations, and control, then they can both generalize for themselves, and understand the generalizations of others.

4. The principles of political science needed by citizens in general should grow up through all the years of one's ed-

ucation. Every year of junior and senior high school and junior college should provide its annual increment of growth.

5. On the level of the concrete experience, the civic training will be taken care of as a factor of the general social training; not as a separate study.

6. Late in the training, after students are familiar with civic matters in the concrete, they should probably have an intensive summarization course in the principles of social organization and control.

7. Very much of the concrete civic material should be in exact mathematical terms. Such materials are to be used for analyses, problem-solving, and generalizations.

8. Civics is primarily to train the lay citizen for the performance of his lay duties. It is not primarily to tell him what senators or governors should be or do, or what should be done by the police or streets departments; but rather what he himself should do.

9. The ability to do civic thinking and to arrive at civic judgments is to be developed in youth in ways and under conditions as nearly like those in which it later is to function during adulthood as practicable.

10. The ability to act in civic ways is to be developed in youth by acting in ways desired — except for a few effectuation functions, such as voting, paying taxes, doing jury service, etc., which clearly immature youths cannot be trusted to perform.

11. Pupils should do part-time work along with adults in performing tasks involved in directorial and inspectorial civic functions.

12. Civic responsibility rests primarily upon adults, and not upon boys and girls. If the latter are to bear genuine civic responsibility, then adults must share certain of their civic responsibilities in sufficient measure for training purposes.

13. The primordial civic function is the development and

maintenance of right public opinion. To gather, organize, and present facts needed for developing, maintaining and focusing public opinion, is to discharge fundamental responsibilities. The tasks involved relative to any social agency are numerous; and the agencies are numerous. Labors for civic training which involve actual responsibility are therefore inexhaustible in amount.

14. So long as adults are so ignorant of, and unskillful in, their directorial functioning, they cannot be expected to sanction any full directorial functioning on the part of the juvenile population as a part of the latter's training. Education must proceed slowly and carefully.

15. So long as citizens themselves scarcely have heard of their inspectorial responsibilities and have so little knowledge and skill in inspectorial technique, it cannot be expected that they will sanction inspectorial efficiency on the part of the juvenile population. Education must proceed slowly and carefully.

16. Much of civic education relates to things which are controversially about as explosive and dangerous as matters of dogmatic religion. It is indispensable, therefore, that school and community be intimately associated in the formulation of plans and in the coöperative performance of the labors themselves. There is no other field of training in which it is so necessary that the schools should be continuously, week by week, securing their commission from the community as to what they should do.

17. Civic education on the level of generalization and practical performance should be in the hands of broad-minded men and women who are continuously in vital contact with the community — particularly its responsible leaders — and who possess the complete confidence of the community. It is not a field for the blundering novice or dilettante.

18. The school, as a specialized arm of the community, should function in civic training only as commissioned

by the community. Where it says that nothing is to be done, then nothing is to be done. Until reversed by itself, or by the wider community of which it is a part, its decision must stand.

19. Much of the civic training immediately needed by the generation now in our public schools cannot be given in our public schools. Communities are yet too much divided in their judgments as to what this training should be, and therefore are not yet ready to commission the schools to do the work.

Occupations

1. The social studies should give one a proportioned understanding of the occupational world as a whole; and of each important occupational field in itself and in its relationships.

2. The most effective method of learning the nature of an occupation is practical participation in its labors. For general education, this is only occasionally possible.

3. The second-best method is direct observation. This is possible in the case of many occupations, and should be employed in such cases. It is limited, however, to the immediate; and to those occupations that are not hidden behind closed gates.

4. Some knowledge of the materials, tools, and processes involved in certain occupations can be got from short-unit "exploratory" courses in school shops, kitchens, commercial rooms, and the like. The number of occupations that lend themselves to this mode of treatment is limited; the amount of available time is limited; and the school shop is usually but a play-shop. Because of these limitations, the method cannot be so used as to give any great amount of occupational insight. It should, however, be used as fully as practicable; especially where it trains at the same time for unspecialized practical arts.

5. For the concrete occupational experiences, as with most of the social experiences, indirect methods of reading and pictures must be largely employed.

6. A vivid story which reconstructs human experience within an occupation, especially when well illustrated, is an effective means of indirect observation or vicarious participation in the occupation.

7. Concrete biographical stories of men and women who have been concerned in making the inventions and otherwise developing an occupational field constitute excellent concrete materials for reconstructing the occupational experiences.

8. A vivid concrete history of an occupation permits one to enter indirectly into its labors. Histories should be abundantly employed.

9. For revealing the details of occupational procedures, the motion picture permits accessibility to innumerable things to which one does not have direct observational access.

10. The revelation of the occupational groups is a major responsibility of the social studies. A separate study of occupations for purposes of occupational counseling and guidance is, or ought to be, unnecessary.

11. Without a vision of and feeling for the occupation itself, all textbook statements relative to qualifications, preparation, social service, opportunities, advantages, disadvantages, etc., are meaningless to the pupil.

12. Rightly to appreciate the desirability of an occupation, and the opportunities it offers, one must understand its economic, geographical, civic, and social relationships and possibilities.

13. It is obvious that a knowledge of occupations sufficient for occupational choices by the student himself is not possible until rather late in the high-school period. Something, however, can be done all along the line.

Literature and General Reading

Literature is a revealer of human experiences. It should be abundantly used as a means of social training. It is separately presented in this volume because of administrative

considerations. In time it may find itself in the department of social training. Guiding principles have already been presented.

Mental Traits and Tendencies

1. The forces which operate within man himself are the forces which operate the social world. If man is to control them he must first see them; and see them in operation. All normal-minded men and women need a full vision of man's mental traits and tendencies.

2. How man is inclined to act under different conditions is revealed by observing the ways he has acted under those conditions. The facts of history, biography, current news, the type-reconstructions of veracious literature, and the observations of human action in community life are the principal objective data of psychology.

3. The general principles of psychology are to be seen within the specific actions and reactions of men. In other words, they are to be seen in community observation, in history, literature, and the like.

4. Human action is not adequately seen if one does not see the inner forces which impel the action, and which are operating within the action.

5. The experiences of individuals or social groups, territorial or functional, are not adequately revealed if they do not show the psychological forces which are operating.

6. To be rightly seen, the psychological forces need to be seen *in situ* within the innumerable concrete situations where the forces are in operation.

7. After the pupils have had concrete experiences with human action and reaction, then they can both generalize for themselves and understand the generalizations formulated by others.

8. Largely through psychological problem-solving, students will develop their understanding of the psychological tendencies and forces.

9. The psychologic understanding should slowly grow up out of the abundance of concrete experiences. There should be no attempt to teach the abstract principles of psychology separate from these concrete experiences.

10. Books which present in the abstract the principles of psychology can be of service for organizing one's generalizations *after* one has abundantly seen for one's self the general within the concrete.

Pupil Activities and Experiences

Social training must aim at far more than information. It should aim just as fully at awakened interests, beneficent social attitudes and valuations, sense of social responsibility, an awakened social conscience, willingness to exert one's self in promoting the general welfare, powers of self-direction and self-control in the performance of civic and social activities, and other similar matters. Some of these are more fundamental than information and are prerequisite to any proper mastery or use of information.

It is obvious that social education must involve more than the mastery of the informational content of textbooks and collateral readings. Some of the needed fundamental abilities and personal qualities call for the experiences of actual living. The program of pupil activities and experiences therefore must go much beyond the usual textbook study and lesson-hearing of the academic classrooms. It seems it should be a program of experiences primarily; with studies for accessory purposes, for organizing, and for generalizing one's experiences.

Our profession is not yet prepared to say what these experiences and activities ought to be. The following, however, are probably some of them:

1. The pupil will observe the affairs of the community life as widely and as abundantly as practicable.
2. He will participate as abundantly as practicable in the diversified social activities of the community life.
3. He will view mankind, human affairs, and the background of those affairs, indirectly, and participate vicariously through the reading of history, biography, memoirs, literature, travels, geography, and current news. These readings will relate to all lands, peoples, and ages.
4. He will view the workings of the physical forces which influence and condition man's activities.
5. He will view the workings of the biological forces which influence and operate within human society.
6. He will view the workings of the psychological tendencies and forces which influence, condition, and operate within human affairs.
7. He will view the economic forces which operate within human society.
8. He will view the political, civic, and other sociological forces, tendencies, and influences which operate within human society.
9. He will view the religious tendencies and influences which operate within human society.
10. He will solve innumerable social problems by way of discovering the nature, influence, and workings of the various forces which operate in man's affairs.
11. He will discuss social phenomena and problems with his associates.
12. As he observes man's activities in the concrete, directly and indirectly, in increasing measure as he grows more

mature, he will look beneath the superficial social phenomena to the deep-lying social forces, tendencies, influences, and movements.

13. He will participate, according to his degree of maturity, in the activities of the community life which are designed for the maintenance of a proper type of public opinion.
14. He will participate, according to his degree of maturity, in the inspectorial activities of the community life.
15. He will perform unspecialized activities of many kinds with a view to the promotion of the general community welfare.
16. He will participate in making surveys of community conditions; and in the organization, presentation, and interpretation of the facts.
17. He will, etc., etc.

Each curriculum-making group, looking to the objectives and guided by the accepted general principles and assumptions, should make its list of *types* of pupil activity and experience as complete as practicable. It should be sufficiently detailed to make clear the nature of the activities. But on the other hand it should not go so fully into detail as to become cumbersome as an instrument of guidance. Each curriculum-making group should formulate its own series.

The final step then is to take these general types of pupil activity and experience and to reduce them to the specifics which are appropriate for the activities and experiences of four-year-old pupils, five-year-olds, six-year-olds, and so on through each of the grade levels to the end of general education. These detailed activities then will make up the completed curriculum.

CHAPTER VIII

NATURAL SCIENCE

It seems that science functions in the community life, and ought to function more actively and abundantly, in two major ways:

A. It functions as *guidance* of practical activities of many kinds:

1. We live in the midst of a bewildering maze of mechanical appliances. Wisely to use them does not require that the consumer be familiar with the science of the manufacturer. But for operation, adjustment, and maintenance of them, and for protection against dangers, he needs an increasing amount of "consumer" science.

2. In the current community life, one is called upon to deal with innumerable chemical creations; and the number is rapidly increasing. Each has its special work to do because of its special characteristics. If the consumer is to use them so as to secure all of their values and to avoid wastes and dangers, he needs a generous knowledge of them, their properties, their effects, and the conditions of their action.

3. In matters of health care, men and women are concerned with the chemistry, physics, bacteriology, and biology of the body; the chemistry of foods, drink, and of the air one breathes; with the physics of light, color, and electricity in their relations to the organism;

with the physics of climate and the physiology of climatic influences; with the bacteriology of health and disease; with the physiology of digestion, exercise, sleep, emotion, and the like; with the chemistry of dangerous agents to which he may be exposed; and numerous other matters. In the main, health guidance is to be self-guidance. Self-guidance in this field means at bottom the direction of one's judgment by science.

4. As citizens, men and women are concerned with the city water supply system, street lighting, road and street construction, sewer system, the physical plant of public school system, ventilation of public buildings, bridge construction, street construction, tunnels and subways, gas supply, telephone system, milk supply, ice supply, and numerous other matters involved in the civic promotion of the general welfare. The detailed activities of constructing, maintaining, and operating these various things will in the main be performed by specialized vocational groups. They need, however, to be supervised in civic ways by the citizens in order that the plants be properly maintained and the processes be kept efficient. With an ignorant citizenry, the specialists in charge tend to become slack, inefficient, and parasitic. Citizens need to be able to judge processes and results in order wisely through public opinion to supervise the agencies. Further, the consumers are called upon to supply these agencies with the conditions of effective service. A citizenry that is well informed as to the physical needs is prepared to see that the

agencies are properly supplied. They can judge of what constitutes sufficiency and insufficiency and can act rationally on the basis of judgment. These matters require that citizens have considerable information relative to the physical factors. Much of this information must be the science that is involved.

5. The citizen is concerned in many activities which are in part self-directed and in part coöperative. A good example is insect destruction and bird protection — two things which belong together because the birds are the best insect-destroyers. In this matter the individual alone can do relatively little. Public agencies, as the United States Department of Agriculture, unaided, can do relatively little. It is when there is coöperative effort on the part of individual citizens together with coördinating effort on the part of the general agency that most can be accomplished. We expect the activities of the central agency to be directed by science, but if the activities of the individual citizen are to be continuous, consistent, and effective, they too must be directed by his knowledge of science. The situation demands a broad biological vision of the whole field of insect ravages and bird life. Other examples of similar character are: the conservation of forests and tree life in general; elimination and prevention of weeds; eradication of noxious fungi, and micro-organisms; community sanitation; and civic beautification.

6. Then there are the unspecialized practical activities of premises and garden. Wise care of these requires the guidance of science from fields of physics,

chemistry, plant science, entomology, bacteriology, climatology, and earth-science.

These are examples. We need not enumerate further. It is evident that in a scientific age citizens as consumers should use science rather abundantly for guidance. They have little need of investigative technique if they can come at the science sufficiently without it. It should be noticed that science as guidance is a matter of continuously seeing things and relations clearly and accurately.

B. Science functions as a *mode of living.* It is a type of intellectual human activity. It is the common human experience of looking at surrounding realities. It is seeing one's environment. It is the sort of thing any alert man is continually doing, and feels that he must do, whether he has ever had any schooling or not. Without schooling it may be very superficial. But the activity is one of the most fundamental characteristics of man.

But one's immediate, unaided, instinct-impelled seeing is limited in range and in depth. To see widely one needs to draw upon the vision of others. To see the hidden and remote things, and the intangible relations, one needs to use the vision of those who have seen. Science reports in language the composite and verified vision of the many who have seen. It permits all equally to see.

Science is but seeing in a wide and accurate way the things to which instinct in a narrower more superficial way is compelling us ever to be giving our attention.

Ordinarily we think of a science as a body of systematized information laid out and arranged, ready for placing in mental storage. The specialized scientist tends, as a matter of vocational habit, to look at it primarily as a refined system of investigative technique which results in a body of living and changing knowledge. It seems, however, that general education will find rather more fruitful the conception that science is activity; that it is but doing what all men and women naturally do anyway — only doing it better. It seems more profitable to look upon it as active and living experience rather than as an embalmed thing ready for the memory vaults.

Science as normal living is experience on the level of intellectual play. It is spontaneously looking at the world of reality as a satisfying or enjoyable type of experience. It is science for the sake of science — seeing for the joy of the seeing.

Since man's life of to-day relates to the whole earth and even beyond, his seeing should relate to the entire earth, and beyond. Since his affairs relate directly and indirectly to all aspects of reality, his seeing should be developed for the various aspects of reality. It seems therefore that the width and complexity of the science program should be dictated by the width and nature of man's environment. It calls for a balanced amount of all of the sciences. And not for specialized technique, but for *vision.*

Those who condemn pure science as useless, except for those items employed for practical guidance, ap-

pear to lose sight of the incomparable value of a vision of the whole range of reality for seeing any of the parts in an intensive way. None of the details of knowledge of one's environment can be so useful as this comprehensive vision.

Yet over against this pure science on the play or foundational level, there is the applied science on the functional or work-level. On this latter level, science is being consciously put to work. On this level, one makes special effort to be exact in viewing the factors involved for the sake of accuracy of control. This applied science, it seems, should be developed as fully as practicable in connection with all practical activities which require it for guidance.

On the play-level, science is *living*. On the work-level, science is *guidance*. The one prepares for the other.

In developing and maintaining a vision of one's environment, one will do a number of things; but there are two general types of experience which are fundamental:

1. **Direct observation.** In the laboratory and field observations of present-day science studies, this type of experience is recognized. Frequently, however, the purpose of it in terms of general education for community life is greatly obscured; and further it is clearly much undeveloped as it relates to many aspects of one's environment. The usual program is specialized and incomplete. It aims too much at training the specialist rather than the man.

2. Indirect observation. For general education in this field, one of the major instruments of seeing must be language. There should be an abundance of revealing readings. These enable the reader to see with the eyes of those who have seen most widely, deeply, and clearly. Naturally one must acquire most of one's basic imagery through direct contacts and through pictures. But having this, there can be no question but that for the layman, reading must be a major method of exploring the various fields of science.

Because of the intensive use of laboratory methods by the scientific investigator, a thing wholly necessary for his specialized vocation, there has grown up a tradition which over-emphasizes for the layman the direct exact observations of the laboratory, and under-emphasizes the indirect observations of reading. Science for the "consumer," however, is a very different thing from science for the specialized investigator.

Along with the readings, there should be an abundance of pictures. The concrete imagery of things cannot be developed by words alone. While direct observation is best for giving this imagery, much of the time this is impossible. Most of the time, for the systematized processes of the school, it is uneconomical. Pictures provide a good substitute. They can present the visual imagery of all visible science phenomena. The motion-picture can add the imagery of motion and change. Along with pictures perhaps one ought also to mention the need of diagrams which are specially useful for picturing types and relations rather than in-

dividual forms. They are specially helpful in assisting one to visualize the more general matters.

Employing the foregoing conception of science in human life and in education, we present for suggestion only the following illustrative series of general principles and assumptions:

Guiding Principles and Assumptions

1. The first task of the curriculum-maker is to discover what science thinking should be done by men and women.
2. Both in their practical life and in their more humanistic experiences, all normal persons should do much of their thinking in terms of science; and all of their thinking with that intellectual perspective and proportion which can be provided only by science.
3. For right appreciations of the marvelous world in which one dwells, one needs that width of vision and depth of insight that can come only from viewing understandingly the things and forces of which it is made.
4. In formulating the program of general training, the department of science should lay special emphasis upon its values for humanistic and religious vision and inspiration.
5. The intellectual and emotional expansion to be produced through the use of science is needed by all men and women. It should therefore be a portion of the curriculum program of each normal-minded man and woman.
6. Science in the general training should give a balanced vision and understanding of the realities, near and remote, with which man is surrounded. All of the sciences should therefore find their proper place in the training of each individual.
7. The study of a specialized science or two, to the exclu-

sion of the others, especially when the emphasis is on technique, does not accomplish the purposes.

8. In formulating the general training curriculum in science, no upper nor outer limit can be fixed. Each person should arrive at normality of intellectual expansion. The normal intellectual stature of different individuals differs very greatly. The levels achieved will therefore differ greatly for the several ability-groups. But for all, the training should presuppose fullness of growth according to possibility.

9. The diagnostic method of discovering shortcomings or deficiencies in man's thinking and outward action due to insufficient science interests, attitudes, or understanding will be employed in finding those portions or aspects of science to be emphasized in the curriculum.

10. The science training should aim at developing lifelong interests, attitudes, appreciations, and mental alertness in the presence of innumerable things, as fully as it aims at science knowledge.

11. For the general training, extensity of vision, interests, and appreciations is more important than the intensity and accuracy appropriate to the research specialist and to the several vocational fields involving applied science.

12. The science understanding should be a matter of gradually expanding growth. It is not a matter to be produced or developed at any one period or stage in one's development.

13. Science interests, vision and understanding are to be developed by experiences mainly on the level of intellectual play.

14. Science of functional, applied, or work type will have its broad foundations mostly laid on the play-level.

15. The science will be of all sorts of legitimate types: pure science, applied science, general science, project science, popular science, technical science, etc. Full-

ness of experience requires diversity in the organization of the materials.

16. The science thinking should grow increasingly quantitative as the individual matures; but the mathematical aspect should be an aspect, and not too much a thing for itself. It should also be in those mathematical terms in which persons in general will do their mathematical thinking in the science fields — applied arithmetic, in the main, with easily manageable numbers.

17. Every aspect of the science is to be introduced, when possible, by full, direct, and normal contacts with the concrete realities themselves; when not possible, then by the best practicable substitutes.

18. Contacts with the realities of science are to be of *normal living* type as fully as possible: Using things; seeing them used; adjusting and caring for them; normal direct observation; explaining things to others; analyzing things for one's intellectual satisfaction, especially as problems arise.

19. The science work of the school should be kept in close touch with the affairs of every-day life, and especially with matters that lie nearest to the interests of growing individuals.

20. One's out-of-school experiences should be utilized for the science training as fully as possible.

21. Science phenomena are to be observed where the observation can be most adequate and effective. This is usually where the things are viewed within their natural environment; not at the schools.

22. Much science observation should be in the laboratory. This is largely of preparatory or accessory type.

23. Pictures and charts will be abundantly used for indirect observation.

24. There should be a sufficiency of interesting readings which reveal in a proportioned way the several fields of science.

25. After a foundation has been laid in concrete experiences, reading can be an effective method of presenting the concrete realities of science which lie beyond the possibility of immediate contacts.

26. Reading can reveal the concrete realities the world over and during past ages.

27. Science readings should be effective for the purposes of indirect vision. The portrayal should be concrete, clear, and proportioned. It should be interesting. A mere didactic presentation of facts is not enough. It should be prepared in compliance with all the canons of effective literary presentation.

28. The histories of technological developments are largely science narratives. They should be much used.

29. The history of health, disease, and sanitation is largely a revelation of science phenomena. The story needs to be full, clear, and, above all, interesting.

30. The stories of the evolution of the things which make up the physical and biological worlds are science narratives of great value.

31. The field of literature is to be drawn upon for science readings.

32. In numerous cases, the biographies of pioneers in scientific exploration and discovery make valuable backgrounds for presenting the science which they discovered.

33. The habit of science reading should be formed in ways and under conditions in which it should continue to function throughout life.

34. The observations and readings are to be followed by *problems* which call for analyses, generalizations, and the interpretative use of general principles.

35. The problems are not questions that call for mere reproduction of facts; but rather questions of cause, effect, possibility, probability, quantity, relation, trend, etc.

36. Problems are to be very numerous, and to constitute a gradient that is easy. The latter is to be long, however, requiring strenuousness in *speed* rather than in dead pull. Naturally the gradient must differ for different ability-groups.

37. The problems will relate to materials that are presented in various ways: field observations, laboratory demonstrations, pictures, charts, and readings. Each of these should be fully utilized for setting problems.

38. In most aspects of the training, there should be an abundance of mathematical problems involving simple numbers for the purpose of making the science factors and relationships clear. In every field these problems should be carefully graded from simple to complex.

39. Facility in thinking in terms of general laws or principles is largely to be gained from practice in solving problems that require the analytic and interpretative use of those laws and principles.

40. Right attitudes toward accurate scientific methods, and skill in their use, is largely to be developed in beginners by confronting them with problems which call for the use of accurate methods in reaching conclusions.

41. Adequacy of thinking in this field is inseparably related to adequacy of expression. There should be much careful, well-organized expression by pupils relative to science matters.

42. In the main the science needed by men and women is the same. Here and there, in a few things only, it should be different.

43. While the science activities of pupils will be directed mainly by the science department, many of them will arise in other departments: hygiene, practical arts, literature, history, economic institutions, civics, geography.

44. The science needed for any vocation should be determined strictly with a view to that vocation. That por-

tion of such science which does not enter into the general training should then be administered as additional and specialized science to those who are to enter that vocation; and only to those. It should be intensive and thorough.

The Objectives

We tried above to sketch the place of science in every-day human life in order to indicate the things to be aimed at in science education. Employing the point of view therein indicated, one can go through the comprehensive lists of human abilities and qualities expressed in Chapter II and discover those which appear to make a demand for science. The writer would make the following selection:

Objectives of Natural Science

100–139. Ability to deal effectively with the science factors involved in physical development and maintenance.

801–819. Ability to deal with the science factors involved in the unspecialized practical activities.

203. The ability of the citizen to do his individual share in performing those social functions for which all citizens are equally responsible in the establishment, organization, maintenance, protection, oversight, and control of the specialized groups and agencies into which society is differentiated for effectiveness of action. (Refers to the citizen's relation to matters where knowledge of science is necessary for participation in public opinion: city water supply systems, street lighting, street and road construction, sewer system, ventilation of public buildings, bridge construction, fire protection, tunnels and subways, gas supply, ice supply, and other similar matters.)

401. Ability, disposition, and habit of diversified *observa-*

tion of men, things and affairs as an enjoyable and fruitful leisure occupation.

402. Ability, disposition, and habit of abundant and diversified *reading* as a means of enjoyable and fruitful *indirect observation* of men, things, and affairs; of *vicarious participation* in those affairs; and of entering into the thoughts and moods of others.

410. Ability, disposition, and habit of taking up occasionally the systematic study of some new thing; and of exploring untried fields of human experience.

411. A disposition toward experimentation, exploration, discovery, and invention in those fields of one's activities and interests which permit initiative.

501. A proportioned intellect apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*a*) Man; human nature; diversities of human nature.
(*b*) Man's activities and affairs in their diverse fields and forms.
(*e*) The specialized or functional groups, — economic, political, religious, and the like — together with their special situations, activities, duties.
(*f*) Man's geographical habitat.
(*g*) The development of man and of his nature, habitat, institutions, manners and customs, specialized groupings, etc., as revealed in biology and history.
(*h*) The world of plant life.
(*i*) The world of animal life.
(*j*) The world of chemical phenomena.
(*k*) The world of physical phenomena.
(*l*) The geological world.
(*m*) The astronomical world.
(*o*) The world of sound and music.
(*q*) The world of form, color, visual art.
(*r*) Man's inventions and creations.

502. Ability effectively to perform the mental activities involved in the proper exercise of the many specific functions which one should perform.

(11–a) *Knowledge* of the things involved. Command over the science required in the efficient exercise of the ability, — both the general or background science and the specific applied science.

(12–a) Interest in and right attitudes toward the science which should always guide planning and execution.

(13–a) Disposition to follow the dictates of science both in planning and in execution.

(14–a) Confidence in the guidance of science. Automatic habit of turning to science when seeking guidance.

602. Ability to see one's environment, the near and the far, the personal and the impersonal, *sub specie aternitatis*, as a vast and restless sea of forces and phenomena, infinite in extent, subtlety, and complexity. Ability to see and realize one's interrelatedness with and within this boundless environment. (The vision provided by science — physical, biological, psychological, social.)

Pupil Activities and Experiences

The pupil activities and experiences necessary for developing "consumer" science should probably be quite different in many respects from those necessary for developing scientific investigators and producers of science. They must look to the awakening of interests, the development of proper attitudes, and appreciations, the formation of habits of diversified observation of science phenomena of all kinds within one's environment, a proportioned rather than a specialized vision of man and his environment, powers of practical

judgment in dealing with innumerable things, as well as such wealth of information as may be normal to the human mind. Some of these things call for experiences which are not commonly employed in the training-for-investigator type of science teaching which is now commonly used for training the "consumer."

The curriculum-making group should look carefully to the objectives and basic assumption which it has itself adopted and in the light of these formulate a definite statement of the general types of pupil activities and experiences which it intends to employ in working out the details of the science curriculum. The following will illustrate the kind of statements which the group should formulate for itself:

1. The pupil will observe the natural phenomena of all kinds within his immediate environment, and as widely as practicable.
2. At the school he will observe natural phenomena in laboratories, workshops, museums and the like.
3. He will read well-illustrated books which enable him to observe indirectly natural phenomena in all important science fields, and the world over. These readings should be relatively abundant.
4. He will perform practical activities in matters of health, unspecialized practical arts, unspecialized civic activities, and play activities which involve the material forces and phenomena of science.
5. He will view, figuratively speaking, the deep-lying forces which manifest themselves within the immediate and concrete phenomena.
6. On the basis of an abundance of observations of the concrete he will generalize his observations by way of arriving at the laws or principles of science.

7. He will solve an abundance of science problems by way of deepening his insight into the forces, relations, principles, and diversity of manifestation.
8. He will discuss his science experiences with his associates.
9. He will frequently present reports of his observations, direct and indirect, in interesting fields of science.
10. He will actively participate, according to his degree of maturity, in the consideration of community problems of many kinds which involve the control of the forces or influences treated in science.
11. He will, etc., etc.

After the curriculum-making group has revised this list to make it agree with their professional judgment, they will probably extend it considerably; and then use it for guidance in selecting the specific science activities and experiences for each of the several grades from the primary level to the end of the junior college.

CHAPTER IX

MATHEMATICS

The quantitative aspect of things is universal. Everything that has existence exists in some measure, degree, quantity, or number. To see things with exactness, one must among other things see them quantitatively. To deal with them practically, one is concerned with quantities, numbers, measures.

This is shown by the simplest matters of every-day life. Rightly to see one's income and expenditures, one must see them in exact quantitative terms. In dealing with them practically in promoting one's income, in buying and selling, or in proportioning one's expenditures in some rational way, one is concerned with handling specific amounts. All thought, planning, judgment, decisions are in quantitative terms. In the same way, in dealing with the time of day, the longer time periods of the calendar, railroad time-tables, costs, distances, motor car mileage, the construction of even the simplest things, etc., the quantitative elements are always vital factors.

At the other extreme, if one would view things impersonal, large, remote, as in fields of science, again one must see them in their quantitative aspects. For example, if one would look out on the solar system, he must note its age, view the long period of its evolution, note its distances and its immensity, and the speeds of movement through space. Except as he sees

these matters in quantitative terms, he scarcely sees them at all. In viewing the constitution of matter, forces, mechanical relations, chemical reactions, and whatever else is involved in fields of physical science and of technology, one hardly sees the things except as one sees them quantitatively.

In viewing or dealing with school finance, for example, as a civic matter, one is concerned with property valuations, budgets, tax-rates, bonded indebtedness, rates of interest, sinking funds, bonding limits, taxation limits, salaries, salary schedules, unit-costs, ratio of school costs to other municipal expenditures, ratio of teaching costs to overhead, variations of unit-costs with variation in size of classes, and a large number of other things. None of these can be intelligible except as they are expressed in terms of magnitude. One's vision of school finance must be quantitative or it does not exist.

In viewing for civic purposes the city gas supply, one is concerned with the size of the plant, its cost, the total daily production, quantity of coal, oil, and other materials employed, quantities of gas produced per unit of materials used, quantity of coke, ammonia, tar, and other by-products produced, values of the product, costs of labor, service rates, measuring the product as it is distributed, capacity of mains and service pipes, and scores of other matters, which must be expressed in terms of quantity or they are not expressed at all. Civic or economic vision here must be quantitative or it does not exist.

It ought not to be necessary to illustrate this matter so copiously; but the usual professional attitude toward mathematics makes it practically impossible for us to see mathematics as a human and community function except as we illustrate it abundantly. For the sake of condensing our illustrations, we here present a considerable list of things which the individual views quantitatively whenever he views them adequately:

Road-building.
Railroads.
Merchant marine.
Postal system.
Express companies.
Street railways.
Electric light and power.
The telephone.
The telegraph.
Banks and banking.
Stock exchanges.
Park systems.
City water supply department.
Garbage disposal department.
Fire protection service.
Police department.
Life-saving and lighthouse service.
Institutions for the care of the incapacitated.
Insurance.
Taxes.
Investment.
Agricultural production.
Wheat production, distribution, and consumption.
Sugar production, distribution, and consumption.
Coal production, distribution, and consumption.
Steel.
Cement production, distribution, and consumption.
Building.
Automobile production, distribution, and consumption.

Commerce.
Mining.
Manufacturing.
Meat packing.
Prices.
Wages.
Supply and demand.
Immigration.
Conservation of natural resources.
The tariff.
Municipal government.
Economy in government.
Child labor.
Cost of living.
Employer's liability.
Pensions and retirement systems.
Municipal sanitation.
Control of the causes of diseases.
Morbidity.
Mortality.
Chemical elements, compounds, and reaction.
Mechanics of solids.
Mechanics of gases.
Electricity.
Sound.
Light.
Climate.

This list is merely illustrative. There are hundreds, even thousands, of such matters which are seen quantitatively whenever adequately seen. We are not prepared to train for the community mathematical functioning until we see that the thing needed primarily is the ability to see and think these hundreds of things in accurate quantitative ways. In the community life, mathematics is not primarily a matter of solving problems, but rather of seeing things in quan-

titative ways and thinking in quantitative terms. In school life, therefore, mathematics should be primarily not a matter of solving difficult problems, but rather a matter of continuously viewing for many years the quantitative aspects of things, and of thinking in accurate terms.

The major deficiency of present-day community thinking is its looseness and inaccuracy. We wallow in a slough of civic and economic inefficiency because we cannot think accurately; because we do not even know that in these fields we ought to think accurately; because we have not seriously tried to think accurately; and because we do not value accuracy of thought.

The major criticism of the mathematical teaching in the general education of present-day high school and college is its colossal failure to develop habits of quantitative-mindedness on the part of the population. Those who have climbed the steeps of our usual algebra, geometry, and trigonometry, appear to think about as vaguely and loosely in the fields of civics, economics, and the like as those who have not. The system has been given a long fair trial. The results are disappointing.

The failure is due to the fact that we have not seriously tried to make the population quantitative-minded in the innumerable fields of their actual thought and action. The usual courses in mathematics are based upon the assumption that a study of the concepts of quantity and of quantitative relations in the abstract will in some magical way give one power

to see the quantitative aspects of everything. The mental condition of our population proves the fallacy of the assumption.

The way to come to see anything quantitatively is to look primarily at the thing itself and to see the quantitative aspect merely as aspect.

This we have done somewhat in our high-school physics, chemistry, and practical arts. In general, however, it has not been attempted. In our high schools we have hammered away at concepts of equality, inequality, ratio, proportionality, similarity, variability, functional relations, and the solution of numerous problems involving these matters. The students have then gone out as blind as before to the variabilities, ratios, functions, etc., involved in school expenditures, taxation, insurance, home management, the fuel supply, ventilation, manufacturing, transportation, economic tendencies, and the thousand other matters which they ought to be able to view quantitatively. Studying about quantity in the abstract is a very different thing from viewing the world in its quantitative aspects and relations.

The need of accurate vision is imperative. The mathematics department does not deal with the things that ought to be seen in this way. It is rather the departments that are dealing with the realities that make up the world, which are in position to show the quantitative relations existing within these realities. It is the departments of civics, economics, practical arts, geography, physics, chemistry, biology, tech-

nology, physiology, sanitation, history, and the like, that are in the position to develop the actually needed quantitative-mindedness.

Ratio, for example, met with in kitchen recipes, in the mixing of cement mortar, in chemical compounds, or in the distribution of municipal expenditures, is actual ratio and not a textbook myth. Let the quantitative aspects of the so-called content subjects be developed and then one will meet with thousands of concrete ratios. Familiarity results from the experiences. For the most part one does not need a generalized understanding of the theory of ratio in the abstract in order to handle ratios any more than he needs a generalized understanding of grammatical infinitives in the abstract in order that he may use his infinitives.

When quantitative variability and the interdependence of variables are met with hundreds and thousands of times in accurately viewing economic, civic, sanitational, and other realities, one has actual knowledge of what the functional relation is, and it is not a mere form of words and mathematical symbols. It is not probable that laymen in general need to arrive at the general conception of "functionality" as a mathematical abstraction. But it is imperative that they see the interdependence of variables in the thousand things of their environment.

If it can be shown that men and women need the mathematical abstractions as well as a vision of quantity in the concrete, then the time to develop the

abstract conceptions is *after* they are thoroughly familiar with the things in the concrete.

We are suggesting diminution of attention to quantity in the abstract; and *greatly* increased attention to quantity in the concrete. We do not see how this is to be accomplished practically for general education except to diminish the abstract mathematics in the mathematics department, and to increase the quantitative element in the handling of the so-called content subjects. Time saved from the former can be used for the latter.

"The other departments cannot be trusted to take care of the mathematical aspects of their subjects," we are told. Then it is time that these departments learned how properly to perform their tasks. They are not doing it so long as they deal with things in loose, inaccurate, and non-quantitative ways.

"Colleges will not stand for any such handling of mathematics." As a matter of fact, colleges of modern type will welcome with enthusiasm increased power of accurate seeing and thinking on the part of their incoming students. Colleges are coming to be pretty open-minded. More and more they are coming to be interested in the intellectual quality of students that come to them, rather than the specific courses which the student may or may not have had.

"The plan requires that mathematics be taught incidentally." This statement assumes that our primary educational interest here is an understanding of mathematics in the abstract and that we are pre-

senting a method of teaching this type of mathematics. This is to employ the attitudes and valuations which we are saying should be reversed. The thing which the population needs is not primarily a knowledge of mathematics in the abstract and ability to solve abstract mathematical problems; but rather accurate quantitative vision of things, forces, and relations. This major thing is not to be taken care of incidentally. We have in the past left it to the mathematics department to take care of more or less incidentally and the department has never been really interested in it. This situation is to be reversed. The thing of major value is to be taken care of as the major process; the thing of minor value as the incidental process.

Naturally, if one is to think in terms of number, he must have the number concepts and vocabulary. He must know the number system. He must have some skill in computation in its various forms. How far he should go into the realm of general number is uncertain; probably some distance, and yet for general education not so far as is attempted in the traditional algebra. In any case, the bright will go farther than the medium; and the latter farther than the backward. The latter will probably not go beyond concrete number — they will do well if they ever can go as far as that will carry them.

An understanding of the number system, concrete and general, and skill in performing the essential operations needs to be taken care of in the mathematics classes. This, however, ought not to require a great

amount of time, since the bright can travel with speed and the dull need not go far. Then beyond the needed minimum of such abstract mathematics, the mastery can be left to the *use* of mathematics in the content studies. Except for the alphabet of the field the way to learn mathematics is to use it.

"The content-study departments have so much to do now that they have not time to introduce the necessary quantitative elements into their studies." This is to say that they do not have time to take adequate care of their subjects, since this is done only when matters are handled in accurate ways. As a matter of fact, we have not seriously tried yet to make our content-subjects properly quantitative. We do not yet know how much time would be required. We cannot know what is possible until we have tried. The chances are that when things are made definite through making them quantitative, more can be accomplished in a given time than under present methods of dealing with vagueness and undefined generalities. It is difficult to make speed in a fog, dealing with fog-material.

Thus far we have discussed mathematics as an *aspect* of one's current seeing and thinking: as an omnipresent practical intellectual function; as a thing of use, subordinated to other things. But this further question arises: May not mathematics, like any other science, be a field of fundamental or primary human experience? May it not be a fruitful field of intellectual play?

Mathematics, of course, is a science. Yet it differs in fundamental ways from the sciences treated in the foregoing chapter. Those sciences make clear to us the active forces with which man must deal and which he must control. In each of them the thing treated is positive energy in action and at work. Mathematics, on the other hand, does not confront us with positive and active forces or energies which are to be controlled. It deals only with *aspects* of these active realities. And as an aspect, it is best seen *in situ*.

But can the field of mathematical concepts be a field of intellectual luxuriation comparable in value and appeal to that of the positive sciences? Does the mathematics satisfy intellectual hungers which ought for one's development to be satisfied? Does it present an inspiring vision of reality, of sufficient appeal to stimulate the necessary effort, and of sufficient value to warrant the necessary time, expense, and labor?

In some measure, doubtless we can answer all of these questions in the affirmative. It can probably be of considerable value to those of large native intellectual endowment; and it may be justified for them since they can ascend the mathematical steeps without the expenditure of any excessive amount of time or energy. The poorer the native endowment, the less can be the intellectual profit and the greater must be the time and energy required. As we descend the scale of ability, therefore, we relatively soon reach the point where diminishing returns make the higher mathematics an insufficiently profitable field of pure

intellectual play. It must also be admitted that even with the intellectualist, in the majority of cases, the intellectual hunger here is not particularly striking — rarely is it a field of self-motivated intellectual recreation. Neither can it be urged that for most persons mathematics in the abstract presents an inspiring vision of reality of a type which warrants time and labor. Leaving aside teachers and other specialists in mathematics, few persons find anything inspiring about quadratics, simultaneous equations, or the quantitative relations involved within a right triangle. A considerable percentage of adolescents enjoy the activities just as they enjoy puzzles or chess in a competitive social atmosphere. They enjoy doing things; and solving problems or puzzles is doing things. There are, however, other types of problem-solving that may be just as interesting and endlessly more profitable.

"But the general discipline of climbing these intellectual steeps?" asks one. Doubtless it is good for one to climb into the rarified intellectual atmosphere — if he enjoys it enough to do his own climbing, and if he does not here waste time and energy which are needed for other activities of more clearly demonstrated worth. Let it be an "extra."

In line with the foregoing discussion we suggest the following *illustrative* platform of general principles and assumptions:

Guiding Principles and Assumptions

1. The mathematics of the basic general training should be that which functions in the non-vocational thought and affairs of men and women; together with that which is common to all vocations.

2. On the side of practical uses, the major thing needed is not ability to solve difficult mathematical problems; it is rather ability and disposition to think accurately and quantitatively in one's affairs. The latter frequently involves mathematical operations as incidental matters.

3. The way to learn to think quantitatively in fields where this is desirable is mainly to think quantitatively relative to matters in those fields.

4. The ability to do quantitative thinking is to be developed in youth under conditions as nearly like those in which it is to function as practicable.

5. While the mathematical operations are not the main things, yet it is indispensable that one perform the needed ones with certainty and skill.

6. The number system must be studied and mastered in and for itself before it can be used for quantitative thinking.

7. The needed mastery of the world of number is to be attained mainly through using number — not by studying about number.

8. In the general training, the theory of mathematics is to be developed in the minimum measure actually needful for quantitative thinking. It is accessory, not fundamental.

9. Much of the content of the economic and civic studies should be thoroughly quantitative.

10. The quantitative element of the science studies should be fully developed; but for the sake of the science

needed in the general education; not for training in a specialized technique.

11. Outside of their vocations, almost the only mathematics really used by men and women is applied arithmetic.

12. Even in their vocations, only a small percentage of citizens use algebra or trigonometry; and practically none use demonstrative geometry.

13. The needed mastery of the world of form and space-relation is to be attained mainly by using and constructing forms. Studies about form need to be only brief and incidental.

14. In their general activities, individuals are sometimes concerned with the use of formulæ; but rarely with their derivation.

15. The "consumer" uses the inventions of others. He needs to know how to use them; but he need not know all the technical science used by the inventor. This applies to mathematical devices as fully as to clocks or speedometers.

16. An appreciation of the worth of mathematics in human life should be developed by using mathematics in one's affairs; and by seeing its uses in human affairs in general.

17. Mathematics has its highest disciplinary value when it is the quantitative aspect of one's civic, economic, scientific, vocational, and other thinking and planning.

18. Arithmetical activities and experiences of the applied type should be more abundant and diversified than at present; they should be particularly abundant on the later levels of one's general education.

19. That algebra, geometry, or other mathematics, which actually functions, or should function, in the non-vocational affairs of men and women should be included in the basic general training; beyond this, for general education, it should be optional.

20. The essentials of the algebra and intuitive geometry which are actually needed by men and women in their non-vocational affairs can be mastered in a relatively brief time. Frequent application can take care of the assimilation.

21. Outside of certain specialized technical occupations, trigonometry is not used. It does not provide centers for systems of ideas valuable in one's general intellectual or humanistic life. The vision and inspiration presented by the right triangle is scarcely worth mentioning.

22. One should have a very thorough mastery of the mathematics involved in one's vocation; but this is to be provided for in one's vocational training.

23. The algebra, geometry, trigonometry, or other mathematics required by specialized occupations should be discovered by analysis of those occupations, and organized into short or long courses according to the needs of the several occupations. It should then be administered as occupational training; and only to those who have chosen the occupations demanding it. If others take it, it will be administered as an "extra."

24. There are as many types of vocational mathematics as there are vocations. Each should use the illustrative materials of the given vocation.

25. Most thought relative to mathematics appears to assume that a higher form of mathematics is needed for vocations than for all other kinds of human activities combined. In the case of the majority of vocations, this is not true.

26. Few vocations demand more mathematics than that which is called for by the general functional activities of cultivated men and women outside of their vocations. The latter may require special applications and a higher degree of skill; but only occasionally more of the pure mathematics.

27. Because of the advanced mathematics required by a

very few of the vocations there is a greatly exaggerated tendency to administer advanced mathematics to all individuals.

28. General training should never prepare a small but as yet unselected minority for specialized activities by preparing everybody for those activities in order that the small minority may profit.

29. Functional training demands that the functions be known before the training is given.

30. So long as the schools are unable to give all of the functional training which man needs, they should provide for that which is demonstrably necessary, and omit that which is merely conjectural.

31. As fields of intellectual play, neither algebra, demonstrative geometry, nor trigonometry provide centers of growing systems of ideas of any considerable humanistic value. As apperception centers, they do not greatly function.

32. Number, form, magnitude, and quantitative relation are realities involved in the make-up of one's environment. One can scarcely become fully acquainted with the latter except as he becomes acquainted with the things which make it up. But the number, form, or magnitude which is known as an aspect of the environment should mostly be seen as an aspect of this environment, not merely as an unrelated abstraction, or piece of manipulative technique.

33. Mathematics is a high intellectual realm which makes a fit field of intellectual play experience on a high level for the rarer, finer, more capable minds. Those who can scale these austere heights with zest and pleasure, mostly self-directed, and with such speed that time needed for other things is not disproportionately consumed, can doubtless profit, from the intellectual experience. Whether the profit be small or large is unknown.

34. To dwell in realms of abstract thought is the way to

become at home in realms of abstract thought. Mathematics is one of the highest and most rarefied of these realms.

35. In considering mathematics for developing intellectual power and endurance, it should be borne in mind that there are numerous other heights to be scaled which are as complex and difficult as mathematics; and from which, when once scaled, the outlook is more profitable.

36. Man's needed vision of the infinite is better shown by the realities to which mathematics is applied than by the mathematics in the abstract.

The Objectives

As one looks through the list of abilities and qualities presented in Chapter II, one's first thought is that the mathematics has largely been lost sight of. As a matter of fact the absence of abilities to do things which are purely mathematical and nothing else reveals the place of the quantitative element in human experience. It enters in as one of the factors in many of the behavior objectives. For the basic training, the mathematics objectives are possibly the following:

The Objectives of Mathematics

502 (22–a). The ability, in dealing with one's numerous individual, family, civic, and other non-specialized affairs, to do one's thinking in quantitative terms so far as this is needful for accuracy. Skill in handling the quantitative or mathematical matters involved.

501 (*n*). A proportioned intellectual apprehension, such as one's natural capacity will permit, of the world of number, quantity, magnitude.

Pupil Activities and Experiences

Before attempting to lay out the detailed series of pupil activities and experiences which make up the finished curriculum, the curriculum-making group should formulate a list of the general types of pupil activity which should be performed. The following list is merely illustrative of the kind of series which the group should formulate on the basis of its own judgment:

1. Both in his work and in his play, the pupil will have dealings with innumerable things which require his attention to the quantitative and numerical aspects and relations.
2. His initial ideas of quantity, number, and numerical operations, and his vocabulary, he will secure from teachers, parents, and other associates.
3. He will learn the number system largely or mainly by using it.
4. He will master the fundamental operations largely through performing them repeatedly within work or play situations which call for them.
5. So far as needful he will practice the fundamental operations of number until he can perform them with sufficient ease and accuracy.
6. He will read science, geography, technology, civics, economic discussions of industry and commerce and the like, in which facts are presented in quantitative terms. Readings of this type should increase in relative quantity from the beginning to the end of general education.
7. In his problem-solving in geography, science, civics, economics, and practical arts, he should, from grade to grade, solve an ever-increasing number of quantitative problems.

8. In making surveys of community matters, his facts, together with his organization and interpretation of these facts, will involve an abundance of quantitative matters.
9. As he participates in community discussion which has for its purpose the development and maintenance of public opinion, the facts with which he deals will largely be stated in quantitative terms.
10. He will prepare statistical charts, graphs, and diagrams in his organization for community purposes of civic inspectorial findings.
11. He will, etc., etc.

The curriculum-making group will formulate the general types of pupil experiences which in its judgment should be employed. It may differ widely from the foregoing list. After the group has decided upon the general types of pupil activity and experience, then it will be ready to undertake the task of reducing them to the specifics which will make up the detailed curriculum of each of the school grades from kindergarten to the end of secondary education.

CHAPTER X

PHYSICAL DEVELOPMENT AND MAINTENANCE

Suppose we take the case of one hundred men and women who have been eminently successful in their development and maintenance of physique and physical powers. What have been the activities, habits, and standards of physical behavior of these individuals? What hygienic information have they used for guidance? What has been their general intellectual outlook in this field? When the curriculum-maker has answers to such questions, he will be prepared to define the objectives of education for physical development and maintenance.

Another mode of approach is to discover the ways in which the health of individuals tends to go wrong. It is to find the physical weaknesses, defects, and ailments among the members of the community; and then to locate the activities, habits, information, and the like, which can be of service in preventing or counteracting these deficiencies. In locating the counteracting influences, naturally one will look to the methods employed by those who are successful in their care of the physique. The two methods therefore will arrive at the same conclusions.

Either method will discover that some of the abilities to be developed are as follows:

Objectives of Physical Education

101. Ability to control one's dietary in such ways as to make one's food contribute in maximum measure to one's physical well-being.

102. Ability to keep the body mechanism properly oxygenated.

103. Ability to utilize muscular exercise as a lifelong means of maintaining a high level of physical vitality.

104. Ability and disposition throughout life to engage with pleasure and profit in a varied repertory of games, sports, athletics, outdoor recreations, etc., such as swimming, skating, hiking, rowing, riding, tennis, golf, ball games of various kinds, running games, dancing, fishing, hunting, canoeing, motoring, camping, athletic events, etc.

105. Ability and disposition to engage in a variety of unspecialized practical labors which contribute to one's repertory of physical experiences.

106. Ability to employ setting-up exercises for corrective or emergency purposes when nothing better is available.

107. Ability to carry one's self and to move and act with ease, grace, and precision.

108. Ability to maintain postures conducive to the best physical functioning.

109. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical well-being.

110. Ability to make one's sleep contribute in maximum measure to the development and maintenance of a high level of physical vitality.

111. Ability to relax physically and mentally at proper times and in proper ways.

112. Ability to protect one's self from micro-organisms; and to deal with them and their products effectively in case of attack.

113. Ability to take proper precautions against the spread of disease.

114. Ability to protect from dust, smoke, and noxious gases.

115. Ability rightly to control the factors involved in the maintenance of body temperatures.

116. Ability to dress in ways that promote the physical well-being in maximum degree.

117. Ability and disposition to maintain personal cleanliness.

118. Ability to provide the most favorable conditions for the elimination from the tissues, organs, and body in general of all harmful or needless substances and agents.

119. Ability to control one's relations to sunlight so as to secure maximum benefits therefrom.

120. Ability to secure that variety or diversity of physical experiences necessary for maximum well-being.

121. Ability to draw up an individual program of work, play, rest, sleep, meals, etc., best suited to one's physical nature and capacity.

122. Ability to avoid preventable accidents.

123. Ability to deal with conditions produced by many kinds of common accidents.

124. Ability to care for the teeth.

125. Ability to care for the eyes.

126. Ability to care for nose, ear, and throat.

127. Ability to care for the skin.

128. Ability to keep the heart and blood vessels in normal working condition.

129. Ability to care for the hair and scalp.

130. Ability to care for the nails.

131. Ability to care properly for the feet.

132. Ability to control sex-functions in the interests of physical and social well-being.

133. The ability to keep reasonably well informed, in the degree to be expected of the layman, as to the discoveries of science in the fields of health conservation and promotion.

134. Ability alone or in coöperation with physicians and nurses to deal effectively with many kinds of disorders.

135. Ability to care for the sick — so far as laymen need this ability.

136. Ability to take the protective, precautionary, or remedial steps necessary to protect one's self or family from common ailments.

137. Ability wisely to utilize the services of physicians, nurses, dentists, and other specialists in health and physical upbuilding and maintenance.

138. Ability within one's occupational field to coöperate effectively in providing wholesome working conditions.

139. Ability to perform one's civic functions in coöperating with and in the social support and control of public agencies engaged in promoting the general physical welfare.

Each curriculum-making group should make its own analyses and formulate its own series of objectives. It should then use the entire series as the basis of the program of physical education. Everything in the list should be given its due place. Nothing should be slighted or omitted, — except possibly here and there where communities are not yet ready to sanction certain aspects of the work.

In this field as in every other, the processes of education should be as fully as practicable the processes of normal living. General education of good type is

the process of growing up in the right way. Physical education is the process of growing up in the right way through having a continuity of physical activities and experiences of proper types.

The training in food activities, for example, should result from right kinds of food activities and experiences through all the growing years. This naturally must involve technical scientific information for guidance of the activities. And this should be self-guidance by the growing individual in the degree in which he is sufficiently mature to understand matters and to exercise self-direction. Growth in the power to exercise self-guidance is a part of the total growth. Then also there should be the development of right habits, tastes, desires, valuations, and the like. These will be normal only as they grow up out of the year-long mostly self-directed food activities of the individual. In all of these matters classroom activities will constitute an initial portion of the training; but not the fundamental experiences.

The foregoing illustration is typical of everything in this field. In achieving each ability, the fundamental training is right living. Classroom activities are preparatory to self-guidance.

Some of the right living — about one eighth — will be at school. The other seven eighths will be at home, and otherwhere in the community. The latter calls for certain supervisory labors by way of assisting immature individuals in their out-of-school activities, and by way of providing necessary stimulations and

recognition of effort. A proper program of training quite obviously demands considerable parental understanding and coöperation. In this field of education, obviously schools have tended to become too specialized. A considerable amount of unspecialized educational activity on the part of parents is clearly advisable.

This plan calls for fundamental changes in the usual type of physical education. A curriculum-making group should therefore begin by formulating a platform of general principles and assumptions which they intend to use for guidance. We suggest the following merely as a pattern of the kind of thing which the group will formulate for itself:

Guiding Principles and Assumptions

1. Training for physical development and maintenance is indispensable for all individuals. It is one of the essentials of the basic training.
2. Education during childhood and youth is preparation for the mature life of adulthood. This applies to physical education as fully as to any other.
3. Physical development and maintenance will be the center of interest of the physical training department. The department, however, will also be responsible for that social training involved in the plays, games, sports, etc., which are used as means of physical training.
4. The physique in every portion and aspect is developed and maintained through exercise of function, normal in character and amount.
5. Every portion and aspect of the physique is to be provided for in the training for physical development and maintenance. Exercise of function must therefore look

not only to muscular exercise, but also to nutrition, oxygenation, elimination, sleep, temperature regulation, relations to micro-organisms, and the other matters referred to in the list of objectives.

6. The physical training department has usually too much specialized on muscular exercise and social activities to the relative neglect of other necessary matters.

7. Physical education is a matter of right physical living throughout the twenty-four hours of every day and the seven days of every week. The few hours per week of systematic school exercises out of the one hundred and sixty-eight hours of physical experience can accomplish directly relatively little.

8. The total program of the school should be drawn with a view to proper physical living during the time the children are there.

9. The one hundred and thirty-eight hours per week of physical experience away from the school plant should be utilized as fully as practicable for physical training purposes.

10. Physical experiences of "normal living" type should be the central and major feature of the physical training — and utilized in maximum measure.

11. Activities of preparatory or accessory type should be reduced to a minimum.

12. Through physical examination, analysis, and diagnosis, those responsible for physical development will discover the specific training needs of the individual children.

13. As fully as their degree of maturity will permit, children are to be made acquainted with the diagnostic analyses of their physical condition.

14. Each pupil will have the objectives of his physical development and maintenance made clear to him as he becomes mature enough to understand.

15. After students become conscious of their individual physical training needs, they will listen to talks on those problems by physicians, nurses, dentists, dietitians, and other specialists. They will also read fully relative to the problems.

16. The best muscular exercise is that of vigorous play under normal conditions; or of physical work that is enjoyed.

17. In the formation of habits of exercise, full regard should be had to the matter of interest and pleasure and favorable attitudes.

18. Physical exercises that are not enjoyed by the children are relatively unprofitable.

19. A varied play program takes care of the entire musculature in a sufficiently balanced way.

20. For normal children, a varied play program takes care in a human way of all the desirable objectives of formal gymnastics; and of many others besides.

21. Habits of physical exercise should be formed during adolescence in ways and under conditions in which they are later to function during adulthood.

22. The physical-development-and-maintenance activities that are to persist throughout life are the ones mainly to be employed during adolescence.

23. If "setting-up exercises" are to be employed daily throughout life by individuals, then in training for such habits, conditions as nearly like those in which the exercises are later to function are to be employed in youth in developing the habits. This calls for home exercises for home habits, not school exercises for school habits.

24. If group-gymnastics are to be employed throughout life at word of command, then the group-gymnastics are to be administered during adolescence in this way.

25. If one during adulthood is to employ practical un-

specialized activities for his exercise, then interests should be awakened and the habits formed during adolescence.

26. If physical play is to be the exercise of adults, then interests, habits and skills are to be formed during adolescence.

27. Pupils should be encouraged in every way possible to find ways at home and elsewhere away from the school to secure their necessary amount of daily and weekly physical exercise.

28. The boy or girl who has found ways away from school to secure a sufficiency of physical exercise of proper kinds, and who will keep himself up to physical standard without the use of the school's facilities, should not only be permitted to do so, but encouraged by giving extra credit for the self-direction. The proof should be maintenance of normal physical condition, and continuance of normal development as shown by periodic physical tests and examinations.

29. The schools should provide nothing for the physical development and maintenance of the children that can be as well or better provided by the homes under the supervision of parents, teachers, and nurses.

30. The away-from-school physical play should have the stimulation and supervisory influence of the measurement and record of physical achievement.

31. If physical training is to be adequate, parents must either perform a larger amount of coöperative labor in supervising physical development activities of their children, or pay a larger amount than at present in getting it done by the schools.

32. Owing to the frequent or usual paucity of opportunity at home or otherwhere in the neighborhood, the schools should provide such physical development opportunities as they can.

33. The most earnest attention of the physical training department should be directed to those most in need of it.

34. The physical training spaces should be given over most to those of greatest educational need of them: (1) Those who have least opportunity away from the school; and (2) those in greatest physical need of the training experience.

35. Special effort should be made to develop a full knowledge of the need of life-long continuing habits of proper muscular exercise.

36. The ability to do hygienic thinking is to be developed in ways and under conditions as nearly like those under which it will function in adulthood as practicable.

37. To have greatest value, talks and readings relative to the technical matters of hygiene should be related to the practical hygienic activities of the individual pupils.

38. The major training in proper habits of ventilation, diet, sleep, eliminations, cleanliness, posture, protection from micro-organisms, and every other matter of personal hygiene is that which results from the pupil's self-watchfulness over his individual activities. Preliminary training is needed for awakening necessary interests and attitudes, and for securing necessary information.

39. By way of visualizing health factors, influences, processes, etc., in a proportioned way in their social settings and relationships, pupils will read abundantly relative to matters in this field. The readings should be such as reveal the factors in the vivid concrete ways that awaken interests and hold attention.

40. Out of the concrete readings will grow generalizations; and through problem-solving these generalizations will be used, assimilated, and made functional in one's thinking and judgments.

41. The principles of physical development and maintenance, and of hygiene and sanitation, are to be intellectual results of the labors of this department as fully as principles and generalizations are the results of the

labors of other departments. They are necessary for individual self-guidance.

42. So far as practicable the pupils should have associations and live within an atmosphere that stimulates healthy, well-balanced, and sufficiently vigorous hygienic thinking.

Pupil Activities and Experiences

For each separate objective there probably should be formulated a separate series of pupil activities and experiences. But one will begin such a task by formulating general types of experience to be employed. The beginning of such a series may be somewhat as follows:

1. The pupil will observe, directly and through reading and pictures, the physical qualities, activities, and habits of those who exemplify what he should strive for.
2. He will associate with individuals who value and who exhibit in their own persons the physical qualities and habits which he ought to possess.
3. He will himself do the things needful for physical upbuilding, protection, and maintenance as the basic mode of learning to do them.
4. He will exercise self-direction and self-inspection so far as he proves himself competent to do so.
5. For his self-planning and self-direction, he will seek hygienic information and advice, directly or through reading, from those in a position to know.
6. So far as he is unable to exercise self-direction, he will follow the leadership and guidance of those in directorial relation to him: especially parents, teachers, nurses, and physicians.
7. He will discover and list the shortcomings in his health activities and habits.

8. He will make specially careful study of hygienic information relating to matters in which he finds himself deficient.
9. After he has discovered what he ought to do in the formation of right habits, and what he ought to avoid, he will put himself on guard against lapses from right action until habits have been securely formed.
10. He will periodically measure his physical achievements and condition against standards which are appropriate for him; and he will keep a record of the several fundamental aspects of his development.
11. He will participate in making surveys of various types in the health field.
12. In his readings he will indirectly observe health activities and conditions in different regions and periods of history.
13. He will, etc., etc.

After the curriculum-making group has completed its series of general types of pupil activity and experience, the next step is to take up the objectives one by one and reduce the general types to the specific activities and experiences which are appropriate to each of the several grade levels.

CHAPTER XI

UNSPECIALIZED PRACTICAL ACTIVITIES

Most of the productive and distributive work of the world is done by the specialized occupations. Some of the necessary labor of the world remains and probably ought to remain unspecialized and performed by individuals in general. Most of the farming and gardening will be done by farmers and gardeners; but a small portion of the labor will be done by families in unspecialized ways on their own premises. Most clothing manufacture will be done in the clothing trades; but a portion of it will probably always remain in the hands of housewives. The construction of and major repairs upon houses and household equipment will be done by tradesmen; but minor repairs, adjustments, and replacements will be made by the householder himself. Major labors upon motor cars will be performed by garage and service men; but the car owner will make many adjustments and small repairs and replacements. The food of the family will largely be prepared in bakeries, canneries, and other specialized establishments; yet much of it will be prepared by general or unspecialized household workers within the home. Health care will be in part performed by physicians and nurses, and in part performed by individuals themselves. The upbringing of children in right ways will be in part performed by the specialized educational

profession and in part performed in unspecialized ways by parents.

We live in such an age of specialization that the unspecialized practical activities have until recently been largely overlooked by education. It has been assumed that training is needed for vocational skill and understanding but that these unspecialized labors are either unjustifiable or they are so simple as to be sufficiently taken care of incidentally through the normal processes of living. Undoubtedly this is the case with a large number of them. On the other hand, there are many which require a certain amount of training before they can be properly done.

The feeling is common that all practical labors of men should be specialized; that the specialized groups have the right to perform all of the labors which pertain to their fields and that the ordinary citizen has no right to perform labors outside of his own specialty. This is to assume that we are to attain such specialization that every nail to be driven about the premises must be driven by the carpenter; every post to be painted in the back fence must be painted by a painter; every cotter-ball which gives way in the plumbing faucet should be replaced by a plumber; every wire which jolts loose in the electric iron or motor-car is to be replaced and tightened up by an electrician. The tendency in large cities is certainly toward this completeness of specialization.

One of the most baffling of educational questions at present, therefore, is the degree to which men and

women are to perform unspecialized activities. Years ago when manual training and drawing were justified by their formal discipline values, the courses could be operated on faith without concern relative to their later functioning within the adult life. But nowadays when it is clear that education is preparation for the performance of mankind's activities of one sort or another, and when every educational activity must be justified on the basis of its power to promote these actual adult activities, the problems become very difficult. In our cities and villages and even on the specialized farms, gardening has largely disappeared. Even the most minor repairs about the home are turned over to carpenters, plumbers, painters, and janitors. Mothers buy most of the clothing ready-made. Outside laundries do the family washing and ironing, and foods are secured from bakeries, caterers, and delicatessens. There is no doubt of the strong drift toward increased specialization of all productive and distributive labors, with corresponding diminution of unspecialized activities. Even in the upbringing of children, parents wish to turn over to teachers, nurses, etc., all possible responsibility, retaining in their own hands the least possible.

In discovering the objectives of education one will begin with analyses of community activities. He will discover what men and women are doing; especially what they ought to be doing. He will discover what ought to be done by analyzing the activities of those who are doing things in the best way. Now the ques-

tion arises as to just what class of persons in our communities it is who are performing the proper amounts and types of unspecialized activities. If we could know this, then we could make the analyses for determining the educational objectives. There is no agreement. No one knows.

There are those who believe that practically all labor should be placed in specialized hands, each person doing one kind of work and that one kind well. At the other extreme there are those who believe that each individual should do one specialized kind of work well, and yet also perform many kinds of practical activities in unspecialized ways. For these beliefs he presents such reasons as the following:

I. Beyond a certain point, specialization is not economical. When a wire jolts loose in the connections of the home electric washing-machine, it is but the work of a minute to replace the wire and tighten the screw. The loss of time, labor, and money is practically zero. But if one is to use the services of the specialized tradesman, the individual and social costs are surprisingly numerous; and in their aggregate, large. One must telephone to the electrician, his clerk must take and record the order, the telephone system must transmit the communication. The work will wait an hour, a day, or a week before the workman can get around to it. The electrician must then travel, usually walk, several blocks to the house. On arrival, he must locate the difficulty and make the repairs. Then he returns to his shop. The work has

required from one to three hours. The bookkeeper records the matter. At the end of the month he makes out the bill, and the postman delivers it. The housewife writes out the check, prepares the envelope, mails it. The postman delivers this second letter. The check goes to the bank, requiring more labor there. It is surprising what a social commotion is caused by a wire's jolting loose.

Now all of these labors must be paid for by the family. The expense amounts to quite an item. It is not a negligible matter. It is a loss to the individual. But since these many labors of the social mechanism have produced absolutely nothing but the replacement of an electric wire, we must note the complete waste from a social point of view. This type of unnecessary thing is the source of much of the high cost of living.

The purpose of specialization of industry is increased production, increased economy, and in consequence increased general welfare. Its purpose is increased production with diminished labor. When the specialization reaches the point where the process is reversed, where there is less production, less economy, and less total economic product, then specialized labor is not justified; it is the unspecialized labor which should perform the activity.

We took an illustration that is obvious. But it is not extreme nor exceptional. If one will look through the long list of unspecialized activities listed in this chapter, he will discover that in the case of most of them, under circumstances that are frequent, it is

distinct economy to utilize one's own unspecialized labors rather than to resort to the specialized worker. Naturally, of course, these matters will vary according to the circumstances. We are presuming that men can be made intelligent enough to know when it is advisable to perform labors in unspecialized ways and when it is profitable to turn them over to specialized vocations. The educationist must not be misled by arguments based upon quite special situations and cases.

II. A second reason for the development of unspecialized practical ability is that the individual who must depend on others for everything is helpless in unforeseen emergencies. In this highly mechanical age, we live in a bewildering maze of mechanical contrivances. When in good working order they greatly lighten our labors; but even the best of them get out of order and require adjustments, replacement of parts, and repairs. One who is skillful in keeping them going can make them serve his purposes. One who cannot do so, must await the convenience and good-will of tradesmen who will take up his job after a delay of hours or days or weeks; and then, as often as not, take advantage of him because of his evident ignorance and helplessness.

These innumerable contrivances are provided the consumer for his individual uses. The consumer cannot be merely passive. He must know how to keep the things usable which are supplied him for his uses.

III. Specialized services tend toward inefficiency

and parasitism if they are not supervised by those who have some understanding of the matter. The plumber in a slack season can make the replacement of a cotter-ball in a leaky faucet extend over half a day when he knows that the housewife has no understanding of the trouble and of the character and quantity of the labor involved. It makes greatly for expedition on his part if he knows that she knows that the work can be done in ten minutes. When a family can do things for itself, then it is prepared to get effective work done economically by those whom the family employs. Lacking this ability they are largely at the mercy of the specialized workers. It is in the nature of man whether he be plumber, lawyer, electrician, teacher, physician or public-office-holder to take advantage of his opportunities. Tendencies to parasitism and inefficiency are not to be corrected by preaching at people nor by developing a service-conscience which is self-acting and does not require stimulation by others. Man is not made that way. As a matter of fact, the specialist's service-conscience depends for action upon his knowledge that his activities are understood and judged by those about him.

IV. As we have explained more fully elsewhere, it is not good for a man to be too much of a specialist. Man's nature was formed under conditions in which he was required to perform a great variety of activities and to become a thorough-going specialist in none of them. His nature has fitted him for amateur diversified activities in many fields. If he is to be fully developed

in an all-around way and to maintain this fullness of development, then it seems that he should continue throughout life this diversity of experiences in many fields. One tendency nowadays is to use such play-activities as golf, tennis, or motoring as correctives to our over-specialization. These are good certainly, and they should be utilized in increased measure; but on the other hand it is probable that the grown man should engage in a variety of activities which involve responsibility. The practical activities about home, basement, garage, motor-car, etc., appear to be things beneficent in the maintenance of his personality.

In an age that demands largeness of personality, the natural man is small enough even without specialization. To specialize his powers intensively in some one field and leave his other powers fallow is but to accentuate and perpetuate this natural smallness of the individual. It is good neither for the man nor for society.

V. They are needed to prevent the disintegration of the home. Family solidarity results in chief measure from the experiences of the members of the family in coöperatively exerting themselves, with conscious purpose, to promote the welfare of the home. In the degree in which there are no home responsibilities, the conditions necessary for producing and maintaining family solidarity are lacking. The family inevitably disintegrates.

VI. Finally there is the matter of physical health. The specialized worker whether in office, store, or

factory, tends more and more to be sedentary, performing a simple mechanical process or tending a single machine. The quantity and variety of physical experience is often very limited indeed. Such individuals require the relaxation and the supplementation of activities which involve normally the entire organism. To leave their specialty and turn to miscellaneous activities about home and garden is to provide a necessary type of relaxation and normality of physical experience.

As we look at the actual community life we see that men and women are performing these unspecialized activities about the homes. It is true they are doing it in very different degrees and under very different circumstances. Education should note that they are doing them. It should further note that sometimes they are doing them well and sometimes badly, with an average which tends to be mediocre. They are not things which are to be done with great skill. Whenever they are of this latter character they are to be left to the specialist. Many, perhaps most, however, could be performed much better than at present, and this without any attempt to develop an impossible degree of skill.

In the following incomplete list we have set down those activities which may frequently or occasionally be performed in unspecialized ways by men, by women, or by both.

IX. Unspecialized Practical Labors

800. Ability to use all common kinds of measuring devices: measures of length, area, volume, capacity, weight, time, value, temperature, specific gravity, etc.

801. Ability to sharpen, adjust, clean, lubricate, replace worn or broken parts and otherwise keep household and garden tools and appliances in good order and good working condition.

802. Ability to make repairs, adjustments, and additions to the house and its equipment.

(1) Putting up shelving or extra hooks, etc., in the clothes closet.

(2) Window screens: making, mending, cleaning, painting, fitting, placing, storing, etc.

(3) Adjusting window stops to prevent rattling.

(4) Replacing broken window panes.

(5) Rehanging the window weights where cords are broken.

(6) Adjusting doors so as to make them fit and hang properly.

(7) Putting up window shades; and fixtures for curtains.

(8) Repairing leaks in roofs.

(9) Tarring roofs, gutters, etc.

(10) Inclosing a porch with screen.

(11) Inclosing a sleeping-porch with protections that will operate easily and effectively.

(12) Fitting up rooms in basement or attic for gymnasium or boys' club.

(13) Simple painting, varnishing, whitewashing; preparing surfaces for the work; care of materials.

(14) Putting up and taking down awnings.

(15) Replacing missing or worn-out boards in porch floors or steps.

(16) Renewing worn-out fuller-balls in the water faucets.

(17) Putting on door-bolts and chains, special locks, etc.

(18) Laying carpets, linoleum, etc.

(19) Laying a cement floor in cellar, basement, or garage.

803. Ability to repair, adjust, and sometimes to construct household furniture or other equipment.

(1) The mending of furniture.

(2) The making of simple pieces of furniture.

(3) The making and mending of toys and other play equipment.

(4) Readjusting of dresser and table drawers, etc., making them properly fit.

(5) Making pads and covers for porch furniture.

(6) Framing pictures.

(7) Making ordinary kinds of curtains.

(8) Renewing gas mantles, burners, etc.

804. Ability to participate intelligently in the original planning of one's home.

(1) Judging the suitability of home sites of different types and locations.

(2) Reading architectural plans.

(3) Planning a house in its general arrangements.

(4) Selecting adequate kitchen equipment; and planning arrangement from the point of view of convenience and economy.

(5) Selecting household linens.

(6) Planning the equipment of a home from the standpoint of beauty, durability, and service; and for a specified sum.

(7) Selecting and hanging pictures so that they contribute the maximum of æsthetic effect in the furnishing of the home.

(8) Arranging furniture so as to have the maximum comfort and convenience and the most pleasing effect.

(9) Selecting furniture, draperies, floor-coverings, decorations, etc., from the point of view of economy, durability, and serviceability.

(10) Choosing the decorations of rooms, wall paper, draperies, pictures, rugs, furniture, etc., so that the whole will comply with the principles of household design.

805. Ability to operate household equipment.

(1) The operation of furnace, boiler, stove, or whatever means is employed for supplying the heat of the home.

(2) Management of the ventilation arrangements.

(3) Operating hot-water heaters.

(4) Adjusting the gas and air mixture in the gas range.

(5) Operation and care of the plumbing fixtures in the house.

(6) All activities included in closing up a home for a period of absence.

806. Ability to keep the house, premises, and equipment, house utensils and appliances clean and sanitary.

(1) The cleaning of the house.

(2) The tasks involved in preventing the house becoming unclean.

(3) Polishing and other special care of floors and furniture.

(4) Cleaning of carpets and rugs.

(5) Washing windows.

(6) Cleaning wall paper.

(7) The care of cupboards and cabinets, keeping them clean and neat.

(8) Keeping the silver and other metal ware properly cleaned and polished.

(9) Proper care and cleaning of cut glass.

(10) Removing stains from floors, furniture, etc.

(11) Keeping all the mechanical appliances of the home clean and in good working condition.

(12) Keeping the air of the home, clean, pure, and of proper temperature.
(13) Control of dust.
(14) Using a vacuum cleaner.
(15) Sanitary care of sinks, toilets, and lavatories.
(16) Extermination and prevention of houseflies, cockroaches, rats, mice, ants, etc.
(17) Sanitary care of the garbage.
(18) Keeping the basement properly cooled, ventilated, and cleaned.

807. Ability to keep the house in good order.
(1) Keeping everything in its proper place.
(2) The making of beds, and general care of the linen, covers, mattresses.
(3) Filing clippings, letters, and articles worth keeping.
(4) Keeping clocks wound and regulated and protected from dust and gases.

808. Ability to care for and operate the electrical system and appliances in one's home; and to make certain simple repairs, adjustments, or replacements.
(1) Operation and care of the electrical lighting system of the house.
(2) Cutting off the electric current from the house by means of the proper switch.
(3) Renewing burnt-out fuse plugs in the electric wiring system.
(4) Renewing worn-out brushes in household electric motors.
(5) Joining wires and otherwise repairing broken electric circuits.
(6) Operation, adjustment, lubrication, simple repair, etc., of household electric appliances: electric iron, washing machine, fan, toaster, heater, vacuum cleaner, sewing machine, telephone, etc.
(7) The care of electric batteries.
(8) Keeping doorbells in proper working order.

(9) Connecting up and using a "reducer" in the operation of special types of ornamental lights, toy-motors, etc.

(10) Reading the electric meter.

(11) Locating the difficulty when any portion of the electric system goes wrong.

(12) Operating and dealing with the various electrical appliances, wiring, and connections without danger of accident or shock.

(13) Insulating electric wires.

(14) Construction, installation, and maintenance of home radio apparatus.

809. Ability to protect the home from fire.

(1) Operating a fire-extinguisher.

(2) Turning in a fire alarm.

(3) Preventing the accumulation of waste materials in which fires may easily be started.

(4) Safeguarding of matches, electric wiring, flues, and other places where fires may start.

(5) Special care of gasoline, kerosene, gas and other easily inflammable materials.

(6) Care and proper storing of fuel.

(7) Extermination of rats and mice.

(8) Use of fire-escapes.

(9) Careful regulation of all heating, lighting, and cooking mechanisms at night or during absence, in view of safety.

810. Ability to perform the operations involved in the care of the premises and garden.

(1) Planting and care of lawn.

(2) The care of the vegetable garden: preparing the soil, planting, cultivating, watering, protecting from weeds, insect enemies, fungi, etc., harvesting, storing, etc.

(3) The planting and care of flowers, trees, shrubs, ornamental plants, etc.

(4) Arranging ornamental plants in accordance with the principles of decorative design.
(5) Planting and cultivation of fruit trees, vines, small fruits, etc.
(6) Transplanting small plants.
(7) Spraying of trees, shrubs, garden plants, etc. Destruction of plant and animal parasites.
(8) Making trellises for vines, grape arbors, etc.
(9) Watering, sprinkling, or in dry regions, irrigation.
(10) Picking, packing, storing, etc., of fruits.
(11) Seed testing.
(12) Making and using a hotbed; or a cold frame.
(13) Caring for potted flowers and plants.
(14) Cutting flowers, and arranging for decorative purposes.
(15) The destruction of weeds and weed seeds on property for which one is responsible.
(16) The elimination of breeding places of flies, mosquitoes, and vermin of every sort upon premises for which one is responsible.
(17) The care of insect-destroying wild birds.
(18) Care and repair of garden hose.
(19) Conservation and composting of leaves, lawn clippings, etc.
(20) Protection of one's property from erosion.
(21) The building of fences and gates; and keeping them in proper order.
(22) Construction and repair of walks on the premises.
(23) Setting posts and arranging clotheslines.
(24) The disposal of rubbish of every kind.
(25) Keeping that portion of landscape for which one is responsible attractive to the eye.
(26) Keeping the premises free from dust in dry season.
(27) Doing one's part in keeping street, alley, road, etc., clean and sanitary.

(28) The control of smoke for which one is responsible.
(29) Making tennis courts or other private playgrounds, and keeping them in good condition.
(30) Constructing and placing home playground equipment.
(31) Protecting, cleaning, and repairing wells and cisterns, — where they must be used.
(32) Removal of débris after storm from sidewalks, driveways, gutters, etc., about one's premises. Clearing walks of snow and ice.

811. Ability to care for pets or other live animals.
(1) Care of dogs, cats, or other pets.
(2) The care of poultry.
(3) The care of an incubator.
(4) Care of hares and rabbits.
(5) The care of a horse.
(6) Care and milking of a cow.
(7) Care of goats.
(8) The building of pens and enclosures for pets.

812. Ability to perform the various activities involved in traveling and outdoor life.
(1) Driving a motor-car.
(2) Caring for a motor-car: lubrication, making adjustments, cleaning, renewing simple accessible worn parts, mending and changing tires, etc.
(3) Packing a trunk for traveling, and attending to the transfer and checking.
(4) Keeping trunks, suitcases, and traveling-bags in good repair.
(5) The interpretation of city, railway, and motor guides.
(6) Finding one's way about a strange city.
(7) Amateur photography.
(8) Rowing a boat.
(9) Operating and caring for a motor-boat.
(10) Horseback riding. Driving horses.

(11) Performing the numerous labors involved in camping.

(12) Observing traffic regulations and all rules of the road.

(13) Notification of authorities of, and placing warning at, any place made dangerous by storm, accident, etc.

(14) Aiding in conservation of forests and any other natural resources with which one comes in contact.

813. Ability wisely to select garments.

(1) Recognition of commonly used textiles.

(2) Judging textiles from the point of view of durability and general serviceableness.

(3) Choosing clothing suitable to occasion, weather, and health.

(4) Selecting clothing that is becoming in line, construction, color, and texture, and within one's means.

(5) Selecting appropriate clothing accessories.

(6) Selecting shoes that are satisfactory from the standpoints of hygiene, appearance, and appropriateness to use.

(7) Planning a clothing budget that will not exceed a just proportion of one's total expenditures.

(8) Planning children's wardrobes.

814. Ability to design, select the materials, make, mend, and alter clothing.

(1) Doing common kinds of hand sewing.

(2) Doing common kinds of machine sewing.

(3) Performing various fundamental sewing activities — basting, hemming, tucking, gathering, putting on bindings, making buttonholes, sewing on buttons, hooks and eyes, making various kinds of seams.

(4) Caring for, adjusting, and operating in all desirable ways an improved type of sewing machine.

(5) The miscellaneous mending of garments.
(6) Alterations of ready-made garments. Making over used garments.
(7) Seeing possibilities of remodeling clothes.
(8) Recognition of commonly used textile materials.
(9) Judging textile materials as to durability, attractiveness, practical economy, etc.
(10) Testing materials for quality of fiber and weave.
(11) Designing garments that accord with the principles of design.
(12) Judging of appropriateness of fashion design to material.
(13) Taking measurements.
(14) Using a dress form in designing and fitting of garments.
(15) Selecting embroideries and laces with a view to their durability when being washed.
(16) Shrinking materials.
(17) Using commercial patterns.
(18) Sketching garments seen in order to reproduce them.
(19) Reading a picture in a fashion book.
(20) Calculating amounts of material needed.
(21) Cutting and matching material having a nap; also stripes, plaids, and figures.
(22) Putting collar on garment, hanging skirts, putting in sleeves, mitering corners, putting a belt on a skirt, putting on braids and finishing a garment.
(23) Trimming hats; making alteration in hats.
(24) Making a hat on a commercial frame.
(25) Making a hat frame.
(26) Crocheting, knitting, embroidering, and beading.
(27) Renovating old and faded garments by dyeing.

815. Ability to care for one's clothing.
(1) Keeping clothes properly put away when not in use.

(2) Storage of clothes during the summer for protection from moths.
(3) Keeping clothes properly brushed, pressed, etc.
(4) Keeping one's shoes clean and in proper order.
(5) Packing garments for traveling so that they will not lose their shapes.

816. Ability to perform the laundry and other cleaning activities of the home.
(1) The washing of clothes, including wringing, drying, and ironing.
(2) Doing delicate laundering, as of delicate curtains, dresses, etc.
(3) Washing gingham and other colored cotton fabrics with a minimum amount of injury to the color.
(4) Washing wool.
(5) Removing grease spots and stains.
(6) Using an electric washing machine, keeping it oiled, renewing parts worn out.
(7) Caring for a laundry and its equipment with a minimum expenditure of time and energy.
(8) Cleaning of clothes by dry cleaning process.
(9) Choosing soap or other cleansing agent which is best for the work in hand.
(10) The making of washing fluids.

817. Ability to perform the various activities involved in providing the family with food.
(1) Planning meals with a view to dietary value, palatability, and ease of preparation.
(2) Planning meals for a family of varying ages, activities, and conditions of health.
(3) Buying food intelligently:
a. Foods in seasons.
b. Reliable brands.
c. Proper cuts of meat.
d. Best for money.

e. Proper amounts, considering storage.
f. Proper prices.
g. Avoiding adulterants.

(4) Preparing meals with a proper expenditure of time, energy, and materials.
(5) Preservation and care of perishable foods.
(6) Serving a meal with a minimum expenditure of time and energy.
(7) Making the table and food attractive.
(8) Putting the table linen away and keeping it in proper order.
(9) Washing dishes and cooking utensils.
(10) Putting away dishes and cooking utensils and keeping them in proper order.
(11) Proper care of dish-washing materials and appliances.
(12) The care of the refrigerator and of the current perishable food supply.
(13) Protecting drinking water, milk, etc., from possibility of contamination.
(14) Preparing and packing lunches.
(15) Choosing a well-balanced meal in a public eating place.
(16) The canning and preserving of fruits and vegetables.
(17) Drying fruits.
(18) Making and bottling fruit juices.
(19) Making confections.
(20) Selecting proper utensils for preparation of food.
(21) Using a fireless cooker.
(22) Regulating a gas oven and securing the required heat.
(23) Using a thermometer in food preparation.
(24) The systematic filing of cooking recipes.
(25) Enlarging or decreasing common recipes to meet family needs.
(26) Planning special dietaries.
(27) Preparing food for the sick.

818. Ability to perform the several activities involved in a proper care of the person.
   (1) Care of the nails: manicuring, etc.
   (2) Care of the hair: arranging, brushing, shampooing, etc.
   (3) Care of the teeth.
   (4) Care of the skin.
   (5) Shaving, and keeping appliances in order.
   (6) Simple massaging, etc.
   (7) Keeping toilet articles in order and in good condition.

819. An amateur ability to do productive, creative, or interpretative work in the field of the fine arts.
   (1) Singing.
   (2) Playing a musical instrument.
   (3) Literary production of different kinds.
   (4) Taking part in dramatics, theatricals, pageants, etc.
   (5) Drawing or painting.
   (6) Designing, shaping, decorating, and otherwise finishing pottery or other works of ceramic art.
   (7) Designing: dress design, house design, landscape design, advertising design, etc.

820. Ability to perform the simple business operations involved in the conduct of personal and family affairs.
   (1) Managing a bank checking account.
   (2) Managing a savings bank account.
   (3) Wisely investing one's savings. Avoiding the pitfalls of investment.
   (4) Wisely laying out one's income so as to secure maximum values. Budgeting individual and family expenditures.
   (5) Keeping account of individual and family expenditures.
   (6) Doing the marketing for the household.

(7) Judging the qualities of things; and the probable justice of the prices when buying.

(8) Doing one's ordinary buying with economy of time and effort.

(9) Buying in quantities; and keeping necessary materials on hand.

(10) Evaluating advertising.

(11) Checking up monthly bills in connection with payment of same.

(12) Checking household purchases for accuracy in weight and measure, etc., in connection with the payment of the bills.

(13) Checking up the reading of the meters for gas, electricity, water, etc., in connection with the payment of the bills.

(14) Making out and checking up laundry slips.

(15) Drawing up or filling out business forms in common use.

(16) Wisely protecting one's self and family by means of insurance.

(17) Sending money by bank draft; money order; registered letter or telegraph.

(18) The boxing, crating, or otherwise making up packages for parcel post or express.

(19) Ordering goods by mail.

(20) Procuring and using traveler's checks, letters of credit, and similar devices.

(21) Selling or disposing profitably of one's automobile, horse, house, garden produce or other products of home activities.

(22) Disposing in proper ways of things no longer useful: outworn clothing, furniture, tools, machines, bottles, rags, old iron, and wastes of every kind.

(23) Making change with a reasonable degree of rapidity.

CHAPTER XII

UNSPECIALIZED PRACTICAL ARTS OF MEN

Years ago laymen encouraged the introduction of manual training because of its vocational appearances. School men justified its introduction on the ground of formal discipline; and later, on the basis of its value for vocational choices and guidance.

Now everybody is disillusioned. The manual training is not vocational training. For this reason it no longer receives the support of laymen. On the professional side, as men come to think accurately in terms of human functions and the preparation for specific functions, the formal discipline argument is no longer serviceable. Even if there be a certain amount of transfer, it is not the thing to be depended upon. Functions are to be developed through exercise of function and not through something else. And further we are discovering that the manual training as "exploratory" basis for vocational guidance is not very serviceable. The result is that neither laymen nor school men see any great amount of value in the manual training of the type introduced two or three decades ago.

It survives, however, through the inertia of educational affairs. There are the shops, and what else is to be done with them except to continue the original courses for which they were constructed and equipped?

But this cannot continue. The shop-work for boys must prepare in some way for actual functions of men or it will be abolished. If the older arguments cannot stand the test of experience, and if there are no new ones forthcoming, then this non-vocational shop-work must disappear. Time and money are needed for things of proven worth.

In the judgment of the writer the practical arts training for boys can be justified upon two major bases:

1. It can be training for unspecialized practical activities of sorts suggested in the foregoing chapter; and for reasons there presented.

2. It gives a certain amount of concrete insight into the nature of tools, machines, forces, appliances, raw materials, processes, etc., employed in a number of occupational fields. As a portion of the social training, it is obvious that men should be brought to an understanding of the broad differentiated world of economic production and distribution. This understanding is to be developed mainly through observation, reading and discussion. Rightly, however, to know the solid realities, one needs laboratory or workshop contacts with them. It is not practically possible to put boys for short periods into a large number of occupations by way of familiarizing them with the machinery, raw materials and processes. It is however possible in the school-shops, which under the circumstances would best be called laboratories, to give them short intensive courses for two weeks, a month, or other short period, for bringing them into contacts with things in-

volved in different occupations. It is laboratory experience for the sake of the social studies and in part possibly for the applied sciences.

It is easily possible to combine the two purposes which we have just mentioned in the organization of a single series of courses which can develop a certain amount of concrete occupational understanding at the same time that it trains for unspecialized practical arts.

The knowledge of occupations referred to prepares one for choice of occupation. So far as the laboratory portion of the study of occupations assists one to a genuine knowledge of those occupations, it can be of service for vocational choices and guidance.

If the major purposes here presented are justified by analyses of community needs, then the practical arts courses for boys should be continued in the public school curriculum. It is clear, however, that the courses should be very different from the older and still persistent type of manual training for boys. The courses needed must bear relatively little resemblance to those older courses. The objectives are different. The procedures must be different. The whole spirit and relation of the work must be different.

It is indispensable that the progressive-minded curriculum-maker formulate a platform of general principles or assumptions which he can employ for guidance in this baffling field. We present the following as a starting-point at least for the formulation of such a series of basic assumptions.

Guiding Principles and Assumptions

1. The practical arts course should train men for performing definite practical functions.
2. The practical activities of men for which the practical arts training is to prepare should be definitely known before any course is drawn up.
3. The "faith aims" and "formal discipline hopes" of the old manual training courses are too vague and insubstantial to serve as practical arts objectives.
4. Practical arts courses for the general training of men are not vocational courses. They are not designed to prepare for any specialized vocation.
5. Practical arts courses in general education are in part to prepare for unspecialized activities which are generally desirable regardless of the occupation into which one goes.
6. The things most to be emphasized in the training are those which boys and men do least well in their home activities. The diagnostic method of discovering shortcomings in practical performance will be employed in discovering the objectives.
7. In unspecialized matters, practical skill, habits and right attitudes toward the work are more important than technical knowledge. The training should therefore look most fully to developing habits, attitudes, and practical skill, giving only that minimum of technical knowledge which is demonstrably necessary.
8. For the general training in this field, there is no reason for the school's attempting to develop any high degree of operative skill.
9. The theory of thorough specialized vocational training for production has too greatly dominated most general non-vocational practical arts training.
10. Operating, caring for, adjusting, and repairing things are more important practical operations for men in

general under present conditions than making things in unspecialized ways.

11. Choosing things as a consumer is a practical task more important than making or repairing things in unspecialized ways.

12. The awakening of interests, right attitudes, and sense of responsibility should be matters of central aim.

13. Since practical unspecialized activities should be responsibilities of all men, they should be a portion of the basic general training.

14. Education should aim consciously to prepare men for enough home labors to offset the disintegrative effects upon the home of over-specialization.

15. The practical arts courses will also in part aim at general industrial insight and understanding, thus assisting in preparing for choice of vocation and for civic duties.

16. The short-unit practical arts courses are specially helpful in giving a boy a large portion of the concrete alphabet, so to speak, of the vast and to him endlessly important world of productive industry. The ones to be given, therefore, should be in part chosen on the basis of the relative importance of the occupations. The other major basis is value for unspecialized abilities. On these two bases should the short-unit courses be chosen.

17. The abilities to perform unspecialized practical labors are to be developed in ways and under conditions in which they are to function, — as nearly as practicable.

18. In large measure the introductory training for unspecialized activities will take the form of short exploratory courses and thus care for two aspects of general training at the same time.

19. For the unspecialized activities, the tools and appliances used should be similar to those which ought to be found in and about a properly equipped home. The

elaborate equipment of specialized industry is quite inappropriate.

20. Practical unspecialized activities should be performed where the activities are normal, usually at home as fully as practicable.

21. Since self-directed performance under normal conditions contains educational elements which usually cannot be provided in the academic atmosphere, this superior value should receive appropriate recognition.

22. After the short-unit exploratory courses have given the alphabet of work in the field, training thereafter will depend mainly upon the actual performance of unspecialized home activities throughout the subsequent years of one's education. It should be organized and supervised; and yet it cannot be a portion of the usual type of relatively short intensive school courses. It must be of individual, largely self-directed project type.

23. Schools should not attempt to provide experiences which can better be provided in or about the homes.

24. In preparing for home activities, the schools should demonstrate, explain, stimulate, and supervise. The practice should be obtained at home or other place where the work involves normal conditions and responsibility.

25. Home activities should be seen by the boys as primarily the discharge of home responsibilities; and only secondarily as training experiences.

26. The work should expect every boy to acquire his own set of home tools and appliances and be responsible for them.

27. In this field the training of different boys must differ according to the nature of the opportunities provided in the home and general community life.

28. Teacher-parent coöperation in supervising the home training activities is indispensable.

29. Parents need education of a type which is now largely lacking before they are fitted for properly coöperating in carrying out such a program.

30. The training should be so managed as to develop powers of self-direction.

31. Printed guidance materials should be placed in the hands of boys and their parents.

32. A thing does not necessarily cease to be educational when its informational possibilities are exhausted. The informational learning is only preparatory to experiences that lie beyond which look to habits, interests, attitudes, ability to bear responsibility, and a general condition of mind. In the matter of the unspecialized activities, these latter are usually more important than the informational.

33. The theoretical information of types needed for guidance in the practical arts should be taken care of by the teachers of practical arts. They should be able to presuppose, however, that the necessary general foundation for the applied studies has been laid by the other departments.

34. Direct observation of the occupational activities of the community should be as abundant as practicable.

35. Observational activities are most effective when one is at the same time a participant bearing a portion of the responsibility.

36. In the training for consumption, the observation and analyses of the products of the world of industry should be full and abundant.

37. The direct observation should be fully supplemented by readings, pictures, charts, diagrams, etc., which reveal the world of productive industry.

38. Interests should be awakened and right attitudes developed through the use of stimulating readings.

39. The practical arts training lies clearly upon the func-

tional level; and yet a broad foundation should be laid for it upon the play-level through constructive, operative, participative, and observational activities.

40. Training for the adult performance of unspecialized activities is really a phase of preparation of adult spare-time occupations. At no place along the line therefore should it depart too much from the spirit of leisure-time occupations.

41. The unspecialized practical arts for boys should, for administrative effectiveness, be included in a single department. The present differentiation is due to the influence of the theory of vocational specialization. But this is not vocational training.

The Objectives

For several reasons it is not possible for the curriculum-maker to adopt the series of unspecialized practical activities presented in the foregoing chapter as the objectives of this training:

1. There is a certain amount of differentiation in the labors of men and women. Some of the activities there presented are appropriate for men, some for women, many for both men and women. The curriculum-maker here will select those which are appropriate for men.

2. The list is incomplete. It is merely illustrative. It does not pretend to give any complete list of the practical unspecialized activities. Extensive surveys are needed.

3. Even were it a complete catalogue of desirable unspecialized activities, there should also be other kinds of objectives beyond the field of unspecialized activities, — economic understanding, for example.

4. The activities will vary from region to region with social class, community traditions, and natural environment. It is probable that in this field of training there will be greater diversity among different schools than in any other field of the general training.

We suggest as a starting-point, however, such a list of objectives as the following which are taken from the lists in Chapters II and XI. Workers in any particular school system can eliminate anything which is not valid for their community, modify the things that are only partially valid, and add things omitted. They can then fill in the details according to the nature of their immediate situation.

Objectives of Practical Arts of Men

801. Ability to use all common kinds of measuring devices: measures of length, area, volume, capacity, weight, time, value, temperature, specific gravity, etc.

802. Ability to sharpen, adjust, clean, lubricate, replace worn or broken parts, and otherwise keep household and garden tools and appliances in good order and good working condition.

803. Ability to make repairs, adjustments, and additions to the house and its equipment.

804. Ability to make repairs, adjustments, and sometimes to construct household furniture or other equipment.

805. Ability to participate intelligently in the original planning of one's home.

806. Ability to operate household equipment.

807. Ability to keep the house, premises, and equipment clean and sanitary. (Divided between men and women.)

808. Ability to keep the house in good order. (Divided.)

809. Ability to care for and operate the electrical system

and appliances in one's home; and to make certain simple repairs, adjustments, or replacements.

810. Ability to protect the home from fire.

811. Ability to perform the operations involved in the care of the premises and garden.

812. Ability to care for pets or other live animals.

813. Ability to perform the various activities involved in traveling and outdoor life.

814. Ability wisely to select garments. (Divided.)

816. Ability to care for one's clothing. (Divided.)

821. Ability to perform the simple business operations involved in the conduct of personal and family affairs.

211. Disposition of the citizen as consumer to avoid waste.

215. Ability wisely to choose a specialized occupation in which one can give good service to one's self, to one's family, and to society.

410. Ability, disposition, and habit of taking up occasionally the systematic study of some new thing; and of exploring untried fields of human experience.

411. A disposition toward experimentation, exploration, discovery, and invention, in those fields of one's activities and interests which permit initiative.

421. Ability and disposition to participate in a variety of unspecialized practical activities as enjoyable and fruitful spare-time occupations.

501. A proportioned intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*e*) The specialized or functional groups — economic, political, religious, and the like — together with their special situations, activities, duties, rights, and relationships.

(*r*) Man's inventions and creations.

508. Ability to judge one's degree of fitness for the many possible specialized occupations; and for the several levels of proficiency in each.

CHAPTER XIII

PRACTICAL ARTS OF WOMEN

In the beginning most practical activities were home activities. Members of the family themselves found or produced the raw materials of food, clothing, fuel, shelter, furniture, and the other necessities. From these raw materials, they themselves shaped the finished products. Most of these labors were performed by the women of the household; with the help of the children, under the direction of the women. A certain rough skill was needed. But the labors were numerous and diverse. There was no opportunity to specialize in any of them. Except as men and women did different types of labor, it was all unspecialized. Since that distant day most of man's and many of woman's labors have become specialized and have gone out of the homes into industry. The raw materials of clothing are now prepared in the textile factories. The making of most garments for men, women, and children has been turned over in large measure to the clothing trades. Food preparation is largely given over to food manufacturers, canners, bakers, confectioners, delicatessens and caterers. Home decoration is delegated to specialized home decorators. Cleaning and laundry work is largely given over to the specialized cleaners and laundries. Obviously woman's traditional work is going the way of man's work into specialized fields. It

has, however, not yet gone so far. In most homes there remains a large remnant of woman's former swollen repertory of unspecialized labors. There is still much cooking, canning, cleaning, laundry, home sanitation, decoration, sewing, mending, garment alteration, garment-making, marketing, home nursing, and child care.

For individual economy, social economy, maximum social productiveness, maximum social welfare, and for achieving our ever-rising standards of taste, it appears desirable that all labors of women requiring large skill or technical understanding should be turned over to specialized labor. For woman's work in the home, this means that while she may continue to do a variety of things upon a level of moderate skill, whenever larger skill and technical understanding is required, she will not attempt them. This has profound significance for the problem of training of women for home occupations. The tendency in courses as now organized is to attempt a maximum amount of skill and technical understanding in the various lines of woman's home work. The training appears to aim at that proficiency that is required for a number of specialized vocations. This is to lay out for her a problem of home vocational training which is larger than that of the vocational training of specialized workers. We have here an instance of the results of confusing general education and vocational education. The standards are set up for the specialized training; and the practices developed for that training. Then these standards and practices are

employed in accomplishing the general training of all women for varied occupations. This is a fallacy which the curriculum-maker will avoid.

In certain respects the problem of the curriculum-maker here is easier than in the case of men. The manual training has never looked to practical activities. But the training of girls in kitchens and sewing-rooms has always looked toward actual activities. The problem is further facilitated by the fact that there is a goodly amount of unspecialized activities remaining in the homes and that these activities are in some measure carried on in all homes. While there is diversity of practices, yet in the multitude of usual homes there is a large group of activities common to all women.

On the other hand the curriculum-maker here meets unsolved problems of endless complexity. It is uncertain how far women should go in performing home occupations and in what degree they should turn them over to specialized industries. For example:

1. To what extent should women and girls in the home do the family sewing and to what extent should it be left to the outside trades?

2. To what extent should women do the family cooking and other food-preparation, and to what extent should foods be secured ready-prepared by those who are specially skillful, and who can utilize the social economics of large-scale production?

3. How much, or what kinds, of the laundry work should they do at home, and what portion give over to the trade laundries?

4. In what measure should they care for the household equipment and contrivances, such as the electrical system and appliances, the plumbing system, vacuum cleaner, electric washing machine, the home heating system, etc.; and to what extent should these be left to the men of the household or to tradesmen?

5. How much of the gardening, floriculture, and other outside activities, should she perform?

6. To what extent should she perform simple matters of painting, papering, kalsomining, glazing, hanging of curtains, putting up household pictures which require the use of simple tools; and to what extent should these be left to specialists?

7. To what extent should they perform labors in the training of their children and to what extent should this labor be turned over to specialized trainers of children?

8. How far should they go in providing home recreations for the family and to what extent should these matters be left to outside amusement agencies?

9. To what extent should she be responsible for the health care of the family, and in what degree should such matters be turned over to sanitarians, nurses, and physicians?

10. How far should she go in taking care, in unspecialized ways, of religious training and activities, and to what extent should these matters be left to specialized agencies outside the home?

The curriculum-maker can answer with certainty no one of these questions for any woman; certainly not for the varying needs of all the women who make up the

community. He cannot sufficiently see the place that the several girls he is training are going to occupy within the community life, there or elsewhere. Yet he must arrive at some kind of working decision in each of these matters before he can formulate the program of training.

In the following list we have set down a composite series of unspecialized activities which have been mentioned at least with moderate frequency by several hundred women. It is probable that a majority of these things are valid for at least a majority of the women.

Objectives of Practical Arts for Women

801. Ability to use all common kinds of measuring devices: measures of length, area, volume, capacity, weight, time, value, temperature, specific gravity, etc.

802. Ability to sharpen, adjust, clean, lubricate, replace worn or broken parts and otherwise keep household and garden tools and appliances in good order and good working condition. (Divided between men and women.)

803. Ability to make repairs, adjustments, and additions to the house and its equipment. (Divided.)

804. Ability to make repairs, adjustments, and sometimes to construct household furniture or other equipment. (Divided.)

805. Ability to participate intelligently in the original planning of one's home.

806. Ability to operate household equipment.

807. Ability to keep the house, premises, and equipment clean and sanitary.

808. Ability to keep the house in good order.

809. Ability to care for and operate the electrical system and appliances in one's house; and to make certain simple repairs, adjustments, or replacements. (Divided.)

810. Ability to protect the home from fire.

811. Ability to perform the operations involved in the care of the premises and garden. (Divided.)

812. Ability to care for pets or other live animals.

813. Ability to perform the various activities involved in traveling and outdoor life. (Divided.)

814. Ability wisely to select garments.

815. Ability to design, select the materials, make, mend, and alter clothing.

816. Ability to care for one's clothing.

817. Ability to perform the laundry and other cleaning activities of the home.

818. Ability to perform the various activities involved in providing the family with food.

819. Ability to perform the several activities involved in a proper care of the person.

820. An amateur ability to do productive, creative, or interpretative work in the field of the fine arts.

821. Ability to perform the simple business operations involved in the conduct of personal and family affairs.

211. Disposition of the citizen as consumer to avoid waste.

215. Ability wisely to choose a specialized occupation in which one can give good service to one's self, to one's family, and to society.

410. Ability, disposition, and habit of taking up occasionally the systematic study of some new thing; and of exploring untried fields of human experience.

411. A disposition toward experimentation, exploration, discovery, and invention in those fields of one's activities and interests which permit initiative.

421. Ability and disposition to participate in a variety of unspecialized practical activities as enjoyable and fruitful spare-time occupations.

501. A proportioned intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*e*) The specialized or functional groups — economic, political, religious, and the like — together with their special situations, activities, duties, rights, and relationships.

(*r*) Man's inventions and creations.

508. Ability to judge one's degree of fitness for the many possible specialized occupations; and for the several levels of proficiency in each.

Guiding Principles and Assumptions

1. The practical arts training of women should seek to develop those abilities of every kind which are needed for the proper management of one's home.

2. Education should aim consciously to prepare for enough home labors to offset the disintegrative effects upon the home of over-specialization.

3. The objectives and the degree of proficiency should differ according to the nature of the homes and the native capacities of the girls.

4. To awaken interests, right attitudes, and sense of responsibility should in every case be a central aim.

5. The training should develop the abilities actually needed by the women of to-morrow; not those needed by the women of yesterday.

6. The home-occupations training should not aim to prepare for activities that require skill of high degree, difficult to attain and to maintain. Those, in the main, should be left to outside industries.

7. In the matter of clothing, the ability to judge and select wisely is at present more important than the ability to

make clothing. This applies also to furniture, house-equipment, decoration, etc.

8. As the purchasing members of the families, women should be competent judges of the offerings upon the market.

9. They should be familiar with the tests or criteria to be employed in judging the quality of every usual kind of article.

10. The things to be most emphasized in the training are, all else being equal, the things which the girls do least well in their actual home activities. The diagnostic method of discovering shortcomings will be employed.

11. In home occupations, practical skill, habits, right attitudes, etc., are in the case of most things more important than technical knowledge.

12. The technical information given should be that which is actually needed for guidance of the practical activities; all that is needed, but no more.

13. Home-occupation training should not be "over-technical" and "excessively wedded to book and laboratory," to the practical exclusion of home activities.

14. Technical instruction much in advance of practical application is of little value. It is usually ineffective and wasteful; and often harmful.

15. Technical instruction for guidance should mainly accompany the practical work as an integral part of it.

16. The theoretical information of applied type needed for guidance in the home occupations should be taken care of by the teachers of home occupations. They should be able to presuppose, however, that the necessary general foundation for the applied studies has been laid by the other departments.

17. The abilities to perform home occupations should be developed in ways and under conditions in which they are to function, — so far as practicable.

18. The school should demonstrate. The practice should be obtained in the girls' homes.

19. The different types of home occupations should be organized into intensive short-unit courses to be given when the girl has reached an age to undertake the practical labors in her home. After the short-unit course is ended, the training will then be a matter of her home opportunities during the rest of her school life — for practice under normal conditions, and for maintenance.

20. The short-unit preparatory courses may be organized spiral-fashion, more complex things being given on different levels of maturity. In a completely developed system, the final laps in the spiral will come after the woman has her own home.

21. A thing does not necessarily cease to be educational when its informational possibilities are exhausted. The informational learning is only preparatory to experiences that lie beyond which look to habits, interests, attitudes, ability to bear responsibility, and a general condition of mind. In the matter of the unspecialized activities, these latter are usually more important than the information.

22. Self-directed parentally supervised home activities performed at home when of proper character contain training elements which cannot be included in merely scholastic activities; they are therefore better, and should for that reason receive correspondingly higher credit.

23. Home activities should be seen by the girls as primarily the discharge of home responsibilities; and only secondarily as training experiences.

24. Pupil-tasks, once begun, should be carried through speedily to completion, even if other things must wait for a time.

25. Teacher-parent coöperation in supervising home-training activities is indispensable.

26. Parents need education of a type which is now largely

lacking before they are fitted for properly coöperating in carrying out such a program.

27. In directing and supervising home projects it is very desirable that students, parents, and teachers have the guidance of carefully prepared printed materials.

28. The training should be devised with a view to developing power of unsupervised self-direction; and of power to self-judge the character of one's labors.

29. The training should involve much observation and analyses of things used in the home or by members of the family.

30. It should involve much reading that reveals possible qualities and characters of things.

31. The courses should include stimulating readings by way of developing interests and attitudes.

32. In the training, there should be abundant use of pictures, charts, diagrams, etc., which show the possible qualities or characters of things.

33. In studies of the qualities of things, the problem-method, and the application of general criteria, should be abundantly employed.

34. The home-occupations training for girls lies clearly upon the functional level; and yet so far as practicable a broad foundation for it should be laid upon the play-level of constructive, operative, participative and observational activities.

35. Training for home occupations is needed by most or all girls. It should therefore be part of the general training expected of all.

CHAPTER XIV

DRAWING, DESIGN, VISUAL ART

Let the reader visualize the activities of men and women in the houses of his neighbors down the street. How many of them do any drawing after they leave the public schools? How many of them have in their homes the necessary drawing paper, crayons, colors, and other materials? As a matter of fact, outside of a few vocations which we are not here discussing, neither men nor women do any drawing that requires skill; and there is no evident reason why they should do so. So little is it a part of their lives that it would seem absurd to them to propose that all families should keep drawing materials in their homes to use as need requires.

Properly to appreciate this situation let one contrast it with handwriting. We teach handwriting because we expect adults to use it throughout life; and we expect them in their homes to have pencils, pens, ink, and paper which they will frequently or occasionally use in the conduct of their affairs. In these matters, we know that we are upon solid ground. When drawing is compared with this, the contrast is striking. The men and women are trained in public-school drawing for skill in an art which they do not pursue. Under no conceivable circumstances can this

or the next generation be conceived as doing drawing in their general or non-vocational affairs.

Do men need drawing for unspecialized constructive activities? An examination of the list of unspecialized activities for men reveals few which call for any use of drawing or design. In the case of women, there are matters of garment design and household decoration. The tendency of the times is toward leaving matters which call for any subtle and complex design to specialized industry. Tastes are becoming so cultivated in all social classes that individuals are not satisfied with the skill to be expected of unspecialized labors. All applied art is becoming specialized. The unspecialized activities relate themselves to simple adjustments and arrangements — — matters which require judgment but not skill of execution.

Looking further, the curriculum-maker will discern that the men and women of the community dwell within the midst of innumerable art forms. Our garments, articles of furniture, lamps, clocks, book-covers, automobiles, the exterior and interior of our houses, even the billboards by the roadside, are shaped and colored to comply in some degree, small or large, with the principles of æsthetic design. Even the most utilitarian things are shaped and painted so as to please the eye.

This is probably a healthy development. A world of beauty is stimulating. It inspires hopes, optimistic attitudes, and vigor of action. A world of ugliness

is depressing. It generates apathy and indifference. It paralyzes effort.

It would seem then that individuals should be sensitive to and appreciative of the better forms of art in the things of their environment. As consumers they should be prepared to choose things of good design and reject those of poor design; and thus gradually create through their choices a world in which beauty prevails and ugliness is reduced to a minimum.

This does not require skill in drawing or in other form of visual art. It calls rather for sensitiveness of appreciation and powers of judgment. The producer we shall continue to train intensively in vocational courses for production; but people in general we shall train for consumption. It is difficult to find any other ways in which the visual art abilities function, or should function, in the general community life. The major objectives must be the ability to choose and use those things which embody the higher and better art motives. Education is to aim at power to judge the relative æsthetic qualities of different forms, designs, tones, and colors. Skill in drawing and design does not find a place as one of the objectives.

There is, however, a possibility to be considered. Should one develop some amateur ability to draw and design as a *means* of developing art appreciations and powers of judgment? This is urged by some, but not all, drawing specialists.

In considering this contention, one should note that it is experience with high forms of art which will en-

able one to see the principles of art at their highest and to have the æsthetic experiences of highest and best type. This being the case, quite obviously the crude art forms which are produced by the amateur cannot effectively serve the purpose.

One need not be a musical composer to appreciate music of high quality. One need not construct a motor-car of good design in order to appreciate good design in motor-cars; nor a beautiful building in order to appreciate beauty in architecture; nor a pleasing landscape in order to take pleasure in pleasant landscapes.

If one would develop a high appreciation of orchestral music, let us say, the major experience must be listening to orchestral music, on numerous occasions, and through many years. He cannot play it himself — at best he could never perform more than a limited portion of it. Not productive effort, but rather entering fully into the experiences, develops the appreciations.

It is the same with visual art. One needs to have his consciousness saturated by living for years in the presence of art forms of good quality. The appreciations will grow up unconsciously and inevitably; and they will be normal and relatively unsophisticated. As a matter of fact, art to be most enjoyed, and to be most serviceable, should not be too conscious.

As one is exposed through years to these visual forms it is possible to analyze them as far as needful into their æsthetic factors or elements by way of de-

veloping all of the needful intellectual apprehension of the æsthetic principles. It seems that one should have some knowledge of the principles of art and design. This appears to be needed now and then when the consumer is unable to make decision on the basis of his likes and dislikes and wishes to fall back upon impersonal criteria of judgment relative to form, tone, design, or color. It seems that this need not be extensive. The amount that is needed by the consumer can evidently be acquired within a comparatively short time on the basis of the concrete æsthetic experiences which should be continuous throughout one's educational career.

If the objectives of the art training for people in general is what we have specified, then obviously the usual program will be one of surrounding them within the school as abundantly as practicable with objects which embody the æsthetic motives in the highest practicable degree: textbooks, interior decoration of rooms, pictures, furnishings of every kind, the appointments of corridors, auditoriums, gymnasiums, laboratories, workshops, exterior architecture, playgrounds, landscape effects, etc. By arranging many of these things on different patterns for different grades and rooms, it is possible for the school environment to be a living and practical museum of applied art. We are here dealing, however, with another one of those matters in which the fundamental experiences will in large measure be found distributed throughout the community life. In their homes, churches,

motion-picture theaters, on the street, and in the parks they will be continuously confronted with these omnipresent works of man's art. This incessant experience can be utilized as means of developing sensitiveness to beauty and to ugliness; and so far as needful as the basis for an intellectual understanding of the art principles involved.

The curriculum-maker must make allowance for native individual differences. Some are so endowed that they can easily be brought to high and delicate appreciations; others with more effort will yet attain a lower level; still others are so insensitive to matters of form and color that even great effort can accomplish relatively little. Education cannot therefore aim at uniform objectives, nor employ uniform procedures. Each group must be trained according to its possibilities.

It was mainly the vocational argument which originally placed drawing, design, and applied art in the public-school curriculum. Influential manufacturers and merchants observed that the commercial products of the mills and looms and factories of Europe were superior in æsthetic design to those of our own country. The patterns of American-made wall-papers, rugs, laces, hangings, cloths, furniture, etc., were primitive and crude as compared with the corresponding products of Europe. It was ascertained that in Europe the workmen, especially the designers, had been carefully and intensively trained in the theory and practices of art and applied design.

This was the explanation of the æsthetic superiority of their product. "Therefore," said these practical merchants and manufacturers, "let us give drawing and design to the children in our public schools and they too will be efficient designers when they reach the factories." As a consequence of this demand, drawing is now given in most city public schools and it is required more or less uniformly of all children. Ten or fifteen millions of children are receiving drawing in consequence of a vocational demand for a few thousand designers. It is doubtful if we can afford so expensive a method of training our designers.

Vocational training should be specific. It should train an individual for what he needs in the one vocation that he is entering. It is not to be given to those who are not entering that vocation. It should be intensive and thorough. It is not to be toyed with by those who are not taking it seriously.

Naturally professional draftsmen and designers need long and intensive training in drawing and design. We are not here considering, however, this vocational training; but rather the general training in art of the total population.

Objectives of Visual Art

A. In the basic training:

401. Ability, disposition, and habit of diversified *observation* of men, things, and affairs as an enjoyable and fruitful leisure occupation.

403. Ability profitably to utilize pictures, and other visual modes of representation, as means of *indirect observation* of men, things, and affairs.

414. Ability to utilize the products of the visual arts as sources of enjoyable and profitable æsthetic experiences.

310. Ability in dress and otherwise to maintain a proper personal appearance.

311. Ability to create and maintain a homelike and hospitable atmosphere about the place in which one lives.

805. Ability to participate intelligently in the original planning of one's home.

501. A proportioned intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*q*) The world of form, color, visual art.

B. Additional, when an extra:

819 (5) Amateur ability to draw or paint.

819 (6) Amateur skill in ceramic art.

819 (7) Amateur ability to design.

Guiding Principles and Assumptions

1. All men and women need a considerable understanding and appreciation of what constitutes beauty and ugliness in form, tone, and color in the things which make up their visual environment. Training for these matters should therefore be a part of that general training which is expected of everybody.

2. Except as art training is vocational, the major purpose is preparing individuals for the uses of art products, not for producing them.

3. Outside of vocational training, most art training will be for judgment and appreciation, not for skill.

4. For one's general purposes, the main thing is to think and to judge and to enjoy, not to create or produce art forms.

5. In this field as in every other, one learns to judge by judging, to think by thinking, to apply general principles by applying general principles.

6. Opportunities will be offered students for short-unit courses in productive art which give that minimum that is helpful to understanding, and which give an opportunity to talented ones to discover their possibilities.

7. Outside of their vocations, and except for a few more or less unusual individuals, men and women do no drawing or designing which requires any appreciable degree of skill.

8. Unused drawing skill atrophies and disappears, — especially when the training ends upon the elementary school level.

9. Education is not warranted in developing any type of skill on the elementary level which is not to be maintained through the later years of one's education, and which is not to be functional upon the adult level. (This is to be interpreted so as to allow for certain deciduous skills involved in plays and games good for growth at the time but not carried forward to adulthood.)

10. An ability once developed on the elementary school level should be maintained through the later years of one's education, either through continuity of use of that ability or through further conscious education or both. (This naturally is to be interpreted in the light of the individual's changing nature as he matures.)

11. Those who show no promise of skillful execution should be excused from the productive side of the training as soon as this is discovered, and trained merely as "consumers."

12. There should be an abundance of concrete observation: studying things in the environment; analyzing them into their elements; judging them in terms of principles; making "visual-art surveys" of many, many things.

13. Classified sets of pictures should be used in studying things to which principles of art have been applied.

14. There should be an abundance of fully illustrated readings which present surveys of visual-art possibilities in the various important fields.

15. An unknown amount of constructive or creative art and design is necessary or advisable in developing powers of judgment and appreciation.

16. The ability to do form and color thinking and judging is to be developed in youth in ways and under conditions as nearly like those in which it will later function during adulthood as practicable.

17. The amount of geometrical and mechanical drawing needed by people in general, outside their vocations, is so slight that for reasons of economy it should be cared for by the department of visual arts.

18. Mechanical drawing needed for vocational purposes should be directed by the vocational department to which the mechanical drawing applies.

19. Amateur art work as a leisure occupation — except as it is a feature of unspecialized practical activities — has little or infrequent appeal and is not particularly fruitful.

20. Training in drawing and other productive art should be only for those of sufficient aptitude to profit; and of sufficient diligence and industry to master the necessary skill of execution without undue effort by teachers. All others should be excused as results will not be great enough to warrant the labor and expense.

21. The visual arts — understanding, appreciation, and skill — needed in any vocation should be determined strictly on the basis of that vocation. It should then be administered only to those who enter that vocation. In all of its aspects, culminating in skill of execution, it should be very thorough, achieving as high a standard as practicable in its applications to things involved in the vocation. But this needed specialized training should have no influence upon the character of the general or non-specialized art training.

CHAPTER XV

MUSIC

When one stands off and views the activities of the community life broadly to see the place of music therein, one notes such things as the following:

1. Music plays a large and apparently increasing part in human life.

2. It provides an experience of which most persons are fond. This does not prove that music is a matter of equally large worth. It is, however, evidence in its favor.

3. Singing plays a diminishing rôle in the community life. In the home-life it is possible now to have music of so much better and more varied character than the usual former type of home-singing, that the latter has been falling into disuse. The conditions also of city and village life are unfavorable to much home-singing. General community participation in singing in the churches is diminishing.

Because of the craving for musical experience it was natural that singing should formerly have played a fairly large rôle in the lives of those musically endowed but whose musical opportunities otherwise were limited. But now that their cravings are satisfied in other ways, it is natural that even the musically endowed should do less singing than formerly.

This diminishing rôle of singing in the community

life does not prove that it is the desirable trend. There appears however to be no discernible evidence that singing will increase within our generation; or even that it can continue to hold the place which it yet occupies. Most persons are content to see it decline.

4. Amateur instrumental performance on an instrument, usually piano, organ, or violin, is diminishing in our homes. Less expensive and more satisfying methods of gratifying one's musical cravings are employed.

This does not prove that it ought to diminish. But there is no evidence to encourage one in thinking that this trend is to be reversed in our generation; and there is no certainty that it ought to be reversed.

5. The cravings for musical experience are largely satisfied through the use of mechanical reproduction, — phonograph, player-piano, radio. Even with moderate-priced instruments, this type of reproduction, as compared with average home playing and singing, is reasonably good. Some of it is superior.

6. The variety of musical experience placed at one's disposal through the use of mechanical reproducing apparatus is immeasurably more extensive than that possible to amateur home production. When the apparatus is good, and the repertory of selections well-chosen, it is also superior in quality to most home production. In time and labor, and therefore in cost, it is more economical.

7. The general musical craving of our population

is further satisfied through music produced by professional musicians. This is provided at churches, theaters and other gathering places.

8. Music as a vocation is increasing in relative numbers and importance. The need therefore of vocational training in this field is increasing. Those to be trained should probably be discovered early and given training through many years. In this chapter we are not dealing, however, with the vocational training.

9. The type of music used, more particularly by the younger generation, is largely of inferior quality. There is deficient appreciation and use of the great music of the world. While mankind appears to tend naturally, and without training, toward higher and finer types of visual art, there appears to be some strange perversity in human nature which causes us to tend toward increasing vulgarity in music. It is probably related to the transitoriness of auditory art forms and the continuity or permanence of the visual forms.

The position of music in the community life points to the objectives to be aimed at in the training. Except for the vocational group, which is outside of our province here, the training in music will be less and less for purposes of general amateur production, whether vocal or instrumental, and more and more for wise consumption. Men and women need the ability to judge the worth of music of different kinds; appreciations of music of better quality; habits of choosing

and using for their purpose music of the better qualities.

The elaborate public-school preparation for singing on the part of all of the population will probably have to be modified. A large part of them will never sing. Training for an activity that is not to function cannot be justified. Even if we think that most persons should do some singing, we must admit that it will be so infrequent and of so small an amount that we are not justified in any elaborate program of training for the purpose. For the majority, probably a rather abundant and diversified rote singing is all that is needed. Possibly for a small percentage of the population, their musical abilities are of such a high character that we should be justified in teaching and practicing them in the musical notation, with a view to making them high-grade amateur vocalists.

In the matter of instrumental performance the expense is so great and the need is so small that schools are not justified, it seems, in giving the instrumental training except as it is strictly vocational training; or high-grade amateur training as an extra for those of special musical capacity.

Objectives of Music

A. In the basic training:

414. Ability to utilize music for a healthful, varied, and abundant awakening of one's emotional nature.

415. Ability to sing.

501. A proportioned intellectual apprehension, such as one's natural capacities will permit, of the realities which make up the world of man's life:

(*o*) The world of sound and music.

114. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical well-being.

116. Ability to relax physically and mentally at proper times and in proper ways.

B. Additional, when an "extra."

819 (1). High-grade amateur vocal ability.

819 (2). Ability to play a musical instrument.

501 (*o*). Technical understanding of music.

Guiding Principles and Assumptions

1. An appreciation of good music on the part of all who have anything to do with music, whether as auditor or producer, is greatly desirable. Education should therefore make as great a contribution to the development of a wide-spread musical appreciation as practicable, all conditions considered.

2. Outside of musical training for vocation, for specially selected high-grade amateurs, and for rote-singing, most musical training will be for judgment and appreciation, not for skill.

3. For the sake of normal training for appreciation, music of proper quality should enter abundantly into the general life of the school.

4. The basic thing involved in developing appreciation of music is hearing it under conditions which induce full and appropriate emotional reactions.

5. Time is to be found in part for the pupils' hearing of music by using it when practicable in connection with various school activities as accompaniment and interlude.

6. Music is normally an aspect or accompaniment of social activities of many types. The best training for appreciation comes from using it or experiencing it as an aspect of social experiences.

7. The ability to use music of desirable types and quantities is to be developed in ways and under conditions as nearly like those in which it later is to function as practicable.

8. For both childhood and adulthood, music should be generously used for emotional intensification of one's experiences.

9. In discovering the music which is to be used for education, one will first find the experiences which can profit from the emotional intensification of appropriate music. Education will then use that music which is most effective for the purpose.

10. General singing as a factor in community life of men and women is rapidly diminishing. The majority never sing.

11. Unless singing is to find a larger place in community life than now appears probable, it is doubtful if more than a small minority of public-school pupils should be expected to learn to read musical notation for sight singing.

12. Pupils should learn to sing the world's best songs; but for most pupils, it will be rote-singing on all levels of their training.

13. Training in singing should be only for those of sufficient aptitude to profit; and of sufficient diligence and industry to master it without undue effort by teachers. All others should be excused since results will not be great enough to warrant the labor and expense.

14. The fundamental experience in learning to sing is to sing. A maximum of time should be given to this; with accessory training reduced to the necessary minimum.

15. Through the use of an effective method of measuring and crediting achievement, pupils will be encouraged to secure a considerable portion of their vocal training in club and home-singing. Results being equal, this should have larger credit — because of the self-direction.

16. Home instruments will be utilized for training in musical appreciation as fully as practicable.

17. As mechanical methods of musical reproduction are perfected, and as skilled professional production of music becomes more accessible, the need of training the general population for singing or instrumental execution diminishes and the need of musical appreciation and judgment increases.

18. When one's mind has been saturated with the great music of the world, even though he knows little of the technique of music, his standards of appreciation are automatically lifted to a relatively high plane.

19. In the main, for non-performers, music is a thing to be used and experienced, not a thing to be studied.

20. Music for the consumer is to be intellectualized only enough to enable him to select good and appropriate music for his uses. Not structure or technique primarily, but emotional (and other personal and social) values.

21. Pupils should be made reasonably familiar — so far as ability permits — with the criteria to be employed in judging the worth of music of different types.

22. The standards of thoroughness and completeness of training that are justifiable for the talented ones who are to become high-grade performers are not to be set up as the standards for those who cannot sufficiently profit from such training.

23. That a thing is greatly enjoyed does not prove that it is a thing of correspondingly great value.

24. Nothing in education, in this department or any other,

is to be justified merely on the ground that it gives pleasure; there must be utility values of some practical or humanistic sort, to which the pleasure is but a lure before the thing is educationally justifiable.

25. When music is given as vocational training, it should begin early and be continuous throughout one's schooling.

26. The Seashore tests should be used in classifying pupils for musical training.

27. Owing to the difficulty of securing enough high-grade vocal, piano, and orchestral music, the auditorium and also possibly the main corridor in every school should be provided with player-piano, phonograph, and radio apparatus, all of modern type.

28. Those in training for vocational or high-grade amateur performance should offset the extra expense of their training by supplying a considerable portion of the auditorium and other school music.

29. Musical training for specialized understanding and skill, is probably not an essential. It should not therefore be permitted to displace any of the essentials of the basic training.

30. For individuals who are not responsive to music, it is of no value. For them, it should be omitted. To force it upon them is to waste time, money, labor, and opportunity.

31. Training one to appreciate good music and to detest the bad is largely a matter of bringing one to appreciate those activities and experiences, personal and social, to which the good music is congruous and appropriate, and to dislike those activities and experiences to which the bad music is congruent and appropriate.

32. Training which looks to the elimination of the auditory outrages which masquerade so abundantly under the name of music must be of the sort which elevates one's intellectual, emotional and social standards, ideals and behavior in all fields. This is more to be accomplished

by one's history, literature, science, associations, and the like, than by musical experience. It is to be accomplished by aiming at a proportioned development of the whole man, rather than by specific musical training.

CHAPTER XVI

ENGLISH EXPRESSION

It is evident that the mother tongue performs a large function in the community life. The curriculum-maker must note, however, the particular ways in which it functions, or should function. Otherwise it is easy for him to miss the road by aiming at a large body of technical information, at literary production on the part of amateurs, or even at nothing more than teaching textbooks without thought of purpose.

The community uses the mother tongue for three purposes:

1. It is a necessary *instrument of thought.* Doubtless there can be simple thought without language. But for man, the language vehicle appears indispensable for thought which is clear, definite, and forcible.

2. It is the *instrument of expression* of one's thought.

3. It is the instrument employed in *receiving the thought* of others.

In every case, the language is but the instrument or vehicle of the thought. The thought is the primary thing; the language the secondary thing. Yet the thought is so completely dependent on its vehicle, as spirit is dependent on body, that it remains but poor and inadequate when the language vehicle is poor and inadequate. We say that language is vague, crude, or confused, when really it is the thought back of it

which is vague, crude, or confused. Thought-power is dependent upon language-power. Language-power depends upon thought-power. They are twin factors that must grow up together.

From this point of view let us look at the language function in the community life. In one's observations of the world about him, one needs the ability to think concerning the thousands of things and relations which currently pass before his eyes, with many of which he is practically concerned. For his civic thought and judgment, for example, and for participating in public opinion, he needs to think clearly concerning a multitude of agencies, processes, and relations. For entering into the thought life of the world in his reading, he must think the thoughts and experiences of men along countless lines. For a wide vision of men and affairs and of their relations, he must think accurately in general terms. He should be as much at home in his generalized thinking as in his concrete thinking. For his vocation, he must think in technical ways concerning innumerable things and processes; and also concerning economic and social relationships. Much technical thinking also he will do in connection with his unspecialized labors. On a different level, he should do much thinking relative to man's interdependencies: physical, biological, economic, political, and social. Here, if anywhere, accuracy and clearness are necessities. This calls for ability in his thought to deal with the broad physical, biological, and social wholes within which lie his interdependencies. For his

religious thinking, his ultimate life philosophy, for the integration in his mind of all the things which make up his world, he needs to conceive all reality in its largest and most general terms.

Confronted with these thought-needs, suppose a man has an active vocabulary of only two thousand words and a reading vocabulary of only four thousand. With this meager equipment, he could not properly think relative to the thousands of things and relations, concrete and abstract, particular and general, to which we have just referred. For adequate thought and expression, he must have a far larger vocabulary. His reading vocabulary should comprise not fewer than twenty thousand terms; with twice this number an appropriate minimum for those of large intellectual caliber.

These figures are not set too high. The frequent assumption that normal-minded men can get on with the meager vocabulary of a few hundred words has been shown to be without foundation.

One of the major needs of community life, therefore, it would seem, is the possession of an adequate vocabulary.

A wide vocabulary springs from vital experience with a multitude of things and relations. It is not a thing, separate from one's experiences, which can be given over by some one who has it, or by a dictionary. It is not a thing that in set lessons one can take on, in isolation from vital experiences. It is not to be developed in any one place; but in all places where experiences are vital.

A second major need is a sensitive *sentence-sense*, and a feeling for the grammatical relationships and sequences in the make-up of the sentence. One imbibes these things from the language atmosphere in which one grows up. Except for the grammatical information needed for avoiding certain pitfalls, no great amount of systematic training is here needed.

A third major need is that language be clear, ordered, and sequential. This really means that the thought, out of which the language is born, should be clear, ordered, and sequential. Take care of the thought, and if vocabulary and sentence-sense are adequate, the language in its essentials will mainly take care of itself.

Naturally one should be skilled in handling certain mechanical matters, such as pronunciation, spelling, handwriting, punctuation, capitalization, paragraph arrangements, margins, and the like. These are not trivial matters. They are to be taken care of with all seriousness. But it should be noted that they are secondary. Let us leave them to one side for a moment.

The three major language matters needed in the community life are vocabulary, sentence-sense, and power to think in a clear orderly way in the innumerable fields of man's thought. If the third of these is adequately taken care of, it will require vital experiences sufficient to care for the other two. The major problem of training in language becomes then the problem of training in power to think concerning the various matters of which man should think; in which process

the language is used as the indispensable instrument of adequate thought.

If one will hold to this view of the matter he will avoid certain serious educational errors:

(1) He will not try to develop power to use the English language in isolation from the power to do the thinking which involves that use of the English.

(2) Where he is in command of a body of thought he will not make the English primary and the thought secondary.

(3) He will not over-emphasize technical information relative to matters of language and literary form. He will use technical information only when needed and in the ways needed. He will first be sure that the need is actual.

(4) He will not aim primarily at the specialized need of literary amateurs; or the vocational needs of literary specialists, while arranging for the training of the total population.

(5) He will not rely upon classes in English expression which are not seriously dealing with any proper body of thought-materials to accomplish the training in the use of English.

(6) He will not expect the training in the use of English to be accomplished mainly by the English department. The latter will take care of certain accessory training, especially in matters relating to formal correctness. But they do not and will not have control over situations involving most needed thought-activities on the part of the students.

(7) He will not take the standards of English required by certain specialized occupations, and set them up as the standards of general training. That a few vocations require a high degree of accuracy in spelling should not set the standard for the general training. The increment of spelling ability above that generally needed is a specialized vocational ability and should be cared for in the vocational training where it belongs. Because a few individuals need a type and speed of handwriting which is quite high is not a reason for setting up this high standard for the general non-vocational training. Because a few individuals require for their professional or amateur performance a quite considerable literary ability, this is no reason for the school's attempting to develop this literary productive power on the part of all.

(8) He will not set up uniform standards for non-uniform people. The ultimate standards, it would appear, should be reasonably high in the case of those of high intellectual endowment; of medium level for those of medium natural endowment; and of relatively low level for those of low endowment. One cannot veto nature's decrees.

Let us state these matters positively:

(1) The thought-training of the school will be developed first with the idea of developing thought-power.

(2) As the thought is developed for the sake of thought-power, the language vehicle will at the same time be developed for the sake of making and keeping this thought effective.

(3) So far as practicable all of the thought-life of the students will be utilized for the development of power to think and to organize thought.

(4) At the same time, the thought-experiences of the pupils will be used as fully as practicable for developing the accompanying language-powers.

(5) All departments when at work in developing powers to think and organize thought will, if their work is adequate and effective, be at the same time developing the indispensable accompanying powers of adequate and effective expression.

(6) Since all departments are interested in developing thought-power, they must also be interested in developing the necessary accompanying language-power. Their interest is not in doing the work of some other department; but in doing their own in the way most effective for their departmental purposes. So long as they feel that they are merely taking care of English as a thing in itself without particular relation to their work, they will not do it. They must see it as furthering the work of their own department or they cannot be brought to do it. They must see the language instrument as their opportunity; not as an arbitrarily imposed obligation.

(7) Technical or accessory training will be employed only so far as necessary for keeping the fundamental experiences of desirable type. It will not be given prematurely; but when needed for guidance. It will not be given in excess of need.

Thus far we have discussed training for the major

matters of English expression. The subordinate matters of formal correctness are also to be cared for. Rightly to see the problem one must see that these are not mere arbitrary conventions. They too are vitally related to the thought-bearing function of language. For what is correct usage? Evidently it is that usage which is most effective in presenting the thought, and in which the language is so completely in the background that one's attention is not distracted from the thought and turned to the language.

One's pronunciation, for example, should be that which is most effective for accomplishing one's purpose. The correct pronunciation is that which is on the whole most effective for transmitting or receiving the thought orally. Faulty pronunciation is that which injures the thought for speaker or hearer. This is done if words are unintelligible, if they are unexpected, if they are affected, or if in any wise they call the listener's attention to the language and away from the thought itself. The language should so clearly mirror the thought of the speaker that the listener is wholly unconscious of the language itself.

The handwriting is to be judged from the point of view of adequacy in the conveyance of the thought. If it permits speed on the part of the writer so that his thought is not obstructed, and if it makes reading easy and rapid on the part of the reader, so that his attention is not called to the handwriting itself, then it is good handwriting. For ordinary social communication, quality is not a matter of conventions, but of service in transmitting thought.

Grammatical correctness is for effectiveness of thought and for keeping the language itself in the background. Whatever confuses or calls attention to the language itself obstructs the transmission of thought; and therefore should be avoided. This is usually to comply with the grammatical conventions; certainly with the language-habits of the group in which one moves.

One is expected to use good form, order, and arrangement in all of one's written work: margins, spacing, alignment, paragraphing, capitalization, punctuation, syllabification, and abbreviation. Here again it is the matter of doing the thing which is most effective in the transmission of one's thought. A page that presents a pleasing appearance, that is neat, ordered, and so arranged that every essential matter can be secured with the least possible difficulty is conducive to effectiveness. The page which is disarranged and confused, and which violates various conventions is bad simply because it obstructs the presentation of the thought.

As a starting-point only for the curriculum-maker, we suggest the following series of general principles and assumptions as practical guides in his work. Let him modify it as he will; or draw up another. But he should take some position in the case of each of the problems here suggested; and hold to it consistently in the practical labors.

Guiding Principles and Assumptions

1. One's expressed language is the objective manifesta-

tion of one's thought; at the same time the language is the subjective instrument of one's thought.

2. In all language expression, the thought is the primary thing, and the language the vehicle; caring for the thought adequately involves caring for the vehicle adequately. The latter is done, however, not for the sake of perfecting the vehicle, but for the sake of perfecting the thought.

3. Every school department that is developing power to think in some field should develop power to express thought clearly and sequentially in that field. This is to be done not for the sake of the expression but for the sake of adequate thought. At the same time this is the type of experience which normally develops one's powers of expression.

4. In every department in the school there should be much English expression — for the sake of the thought or content side of the department's work. The expression should be carefully organized and adequate — for the sake of the thought. There should be as much oral expression by each individual pupil as the limited time will permit. There should also be a reasonable amount of written expression in each department.

5. The distinction which the student himself often draws between expression in his English classes and expression in the classes of history, science, mathematics, etc., is injurious to his attitudes and powers of expression. There should be no possibility of such distinction.

6. The major experience in developing one's powers of expression is normal participation in the thought-life and language-life of school, home, and general community, under circumstances where one is mainly conscious of human experiences and of things objective, and relatively unconscious of the language-vehicle itself.

7. Language activities should be as unconscious and automatic as possible.

8. One should be made conscious of only those aspects

of his language of which he must be watchful for the sake of exactness and correctness.

9. One should be left unconscious of those aspects of language which one uses properly as a result of unconscious learning.

10. A diagnostic study of the language-abilities of each individual student needs to be made. Where he reveals weakness, he is to be trained; where he is already sufficiently strong, he is not to be trained.

11. Spelling drill for each individual should be centered upon the errors which he makes.

12. Handwriting drill for each individual should be centered upon the errors in his handwriting.

13. Pronunciation drill for each individual should be centered upon the errors in his pronunciation.

14. Grammatical drill for each individual should be mostly centered upon the grammatical errors which are to be eliminated.

15. In discovering the language errors and defects of individual pupils, the oral-speech defects of pronunciation, enunciation, voice quality and placement, etc., are to be looked after as carefully as any others.

16. In each aspect of his expression, the student should keep a record of the types of error against which he should be on guard. His major task is to eliminate these errors.

17. Only as the pupil is brought to be watchful of himself, without prompting on the part of the teacher, is his training accomplished.

18. Students should be stimulated to attain each objective as expeditiously as practicable, and with a minimum of teacher-labor. The more it is done without teacher-assistance, through pupil self-direction, as proven by measured results, the greater the credit that should be given.

19. After the pupil has mastered the elements of formal cor-

rectness, all departments should consider it their function to see that he permits no exception to occur in his use of the correct forms.

20. In the main, matters of form should be made clear only as the difficulty arises. So far as no difficulty arises in the undirected language-life of the individual, he may better remain relatively unconscious of the technical language forms and relationships.

21. Focusing attention upon the thought is a mode of keeping the language in the background.

22. All teaching relative to matters of formal correctness will be done by the department of English. Holding pupils responsible for correctness of expression will be a responsibility of departments where expression is a portion of the pupil experience.

23. In matters of formal correctness, the major effort of teachers will not be teaching but rather holding pupils responsible for self-direction in keeping their expression adequate and correct.

24. Only those facts and principles relative to language should be taught which are necessary for rendering thought and communication more effective.

25. The way to learn to express one's self effectively in English is to express one's self within normal situations where one greatly wants to express one's self well.

26. The auditor is as necessary for normal expression as the speaker; the reader, as necessary as the writer.

27. As one expresses one's self orally, one must feel that there are others before him who are accepting his communication in the spirit in which it is intended. If they are merely sitting critical of his expression, the whole situation is deranged.

28. Written expression can be made sufficiently serviceable for training purposes only when the writer is conscious that his production is to be read by or to others whom he desires to please, convince, instruct, or impress. He

must write within a normal expression-situation. These cannot be manufactured; they must be discovered. Make-believe will not serve the purpose.

29. When one is expressing himself normally in writing, he must be filled with the consciousness that what he writes is to be read by some one, in the spirit intended by the writer. If he is merely conscious that it is to be examined by a critical-minded teacher, usually the situation is so deranged that the expression is not and cannot be normal.

30. Deficiency in normal expression opportunities under school control is one of the greatest obstacles to effective training in the active use of language.

31. The English department has not control over a sufficient quantity of normal expression situations to give pupils enough practice in normal written expression.

32. The student who does not realize the values of proficiency in expression, and who lacks a desire to attain it, is not prepared to profit from the training. Mere driving him will be of little avail. Results gained are but apparent and soon lost after the driving season. The training must begin with laying the proper foundation in attitudes, valuations, and desires. Foundation must precede superstructure.

33. The most difficult single problem is how to bring the children greatly to want to use a good quality of English.

34. In the language itself the two major things to be cared for are vocabulary and sentence structure.

35. Normally the vocabulary *grows* up relatively unconsciously out of one's diverse experiences in which language is a relatively unconscious accompaniment and vehicle of thought. The training problem therefore is not one of direct teaching of words, but rather provision of diversified normal experiences which are accompanied in normal ways by the verbal element.

36. Normally, one's sentence-sense and power to construct

complicated sentences *grow* up relatively unconsciously out of one's normal thought experiences. As these grow complex, the sentences keep the pace in complexity.

37. Paragraph structure will develop naturally from the divisions in the thought itself. One who thinks clearly, adequately, and sequentially will break his thought into its natural paragraph divisions with little attention to the matter.

38. The organization of the larger unit of discourse is at bottom but an organization of the thought-content.

39. Because of the sensitiveness of one's associates to matters of formal correctness, errors in language-forms of every kind are to be weeded out as completely as practicable consistent with a due amount of training effort. The standards will vary greatly among individuals according to original natures and social situation.

40. In general education, literature is to be used mainly for its content or experience values. It is not to be used as a basis of training in English expression any more than history or science.

41. There is no more reason for tying the English expression up with the literature than with the history or the science.

42. Training for amateur literary production is to be given only to those of proven capacity, aptitude, and industry — and who require no great amount of teacher effort and assistance.

43. The general training in English expression is not for vocational literary production; nor for any special type of English expression in any vocation. It is only for the ordinary oral and written expression of everyday life.

44. Only those are to be trained for vocational literary production who have definitely chosen this as their work; whom studies of capacity show to be fitted for it; and who are capable of a large degree of self-direction in achieving the skills and understanding.

45. Special vocations require special forms of writing; training to use these, however, should be a portion of the vocational courses, and given only to those who are taking these courses.

46. The basic aspects of English expression are the same whether it be oral or written. This being the case, it should be taken care of as one thing; but a thing of many aspects, each one of which should be adequately cared for.

Objectives of English Expression

1. Ability to use language in all ways required for proper and effective participation in the community life.

2. Ability effectively to organize and present orally one's thought to others: (*a*) In conversation; (*b*)In recounting one's experiences; (*c*) In more serious or formal discussion; (*d*) In oral report; (*e*) In giving directions; (*f*) To an audience.

3. Ability to pronounce one's words properly.

4. Ability in speech to use the voice in ways both agreeable and effective.

5. Command over an adequate reading, speaking, and writing vocabulary.

6. Ability to use language which is grammatically correct.

7. Ability effectively to organize and express one's thought in written form: (*a*) Memoranda; (*b*) Letters; (*c*) Reports, news items or articles, systematic discussion of questions; (*d*) Giving directions; (*e*) Written addresses.

8. Ability to write with proper legibility, ease, and speed.

9. Ability to spell the words of one's writing vocabulary.

10. Ability to use good form, order, and arrangement in all of one's written work: margins, spacing, alignment, paragraphing, capitalization, punctuation, syllabication, abbreviation, etc.

214. Ability to organize and express one's ideas clearly and

effectively in the discussion, formal or informal, of social problems.

312. Ability to converse agreeably and effectively upon a variety of topics and in a mood and manner suitable to the situation.

405. Ability to utilize conversation as a profitable and enjoyable means of participating in the thought of the world.

406. Ability and disposition to give expression to one's thoughts and experiences in proper ways and under proper circumstances.

502 (25-a) Ability to use language efficiently as the vehicle of one's thought.

Pupil Activities and Experiences

What should a pupil do in order that he may come to use his mother tongue easily, effectively, and correctly? The curriculum-maker will probably begin by formulating the statement of the general types of pupil activity and experience. Some of the things that he will include are probably the following:

1. The pupil will hear much English of the type which he is expected to use.
2. He will read much English of the type which he is expected to use.
3. He will associate much with individuals who use the types of English which he is expected to use.
4. He will have experiences under conditions which impel him to report or to discuss those experiences.
5. In every department of the school in which he has opportunities for oral or written expression, he will utilize these opportunities for practice in expressing himself as clearly, effectively, and adequately as practicable.

6. He will discover the kinds of language errors and deficiencies which appear in his English.
7. He will keep himself on guard against each known type of error until it has been eliminated and right habits formed.
8. He will master the technical language information necessary for guidance and judgment in eliminating undesirable language forms.
9. Employing the method devised by the school, he will assist his associates in the discovery of their language errors and shortcomings.
10. He will utilize the assistance of his associates in discovering his own language errors and shortcomings.
11. He will express himself frequently and sometimes at length under circumstances where he desires to express himself well.
12. He will acquire ease and fluency in the use of oral and written English through abundance of experience in using the oral and written forms.
13. Before expressing himself he will organize the elements of his thought so that the latter may be in proper order, sequence, and relation.
14. He will have diversity of experiences with innumerable things under circumstances where the experiences are verbalized.
15. In his pronunciation, spelling, and all of the other aspects of oral and written expression, he will use the best forms of which he has knowledge.
16. He will permit no exception to right language forms, so far as possible.
17. He will frequently revise and rewrite, sometimes several times, his written productions.
18. He will, etc., etc.

Before this list is ready for use, it should be indefi-

nitely extended; yet it should present only the general types of pupil activity and experience and not enter into the details. It is to be an instrument for guidance in formulating the details of the curriculum. With a completed and finished statement in the hands of the curriculum-making group, they can then reduce the activities to the specifics of experience for first-grade pupils, second-grade pupils, and so on through all the grades to the end of secondary education.

CHAPTER XVII

MODERN LANGUAGES

ACTIVITY-ANALYSIS is the beginning of all curriculum-making. Find the activities which men perform, or those which they should perform; and train for those.

As the curriculum-maker considers foreign language in the community life, let him consider his American neighbors who live down along the street. What amount and character of Spanish, Scandinavian, German, French, Portuguese, Russian, or Japanese do they use? What amount should they use? And how may the alien languages function beneficently in the achievement of objectives other than alien language abilities?

To prevent confusion in our activity-anaylses, let us leave to one side those immigrants who are yet but Americans-in-the-making. They bring their own foreign language with them. We are not concerned with teaching it. Let us leave aside also all consideration of language for vocational purposes. It is needed by few vocations, and those very much specialized, calling annually for but few entrants. As vocational training, foreign languages are to be given *as needed* and *when needed*. But this specialized training lies wholly outside the field of general education. It must not be permitted to confuse our thought relative to the general need.

As expressed in the foregoing chapter, language is used in the community life for three purposes; (1) As a vehicle of one's thinking; (2) To express thought; (3) To receive thought.

In making community analyses, then, let the curriculum-maker take up one modern foreign language after another, and for each find the facts in answer to three questions. Let us suppose that he begins with French:

1. To what extent does the community, or should the community, use French as the instrument of its current thinking? And what character of French do they, or should they, use?

2. In talking and writing to each other, or to anybody, to what extent do they, or should they, express themselves in French? And what quality of French and speed of expression do they need for this purpose?

3. In listening to others or in reading the written or printed expression of others, to what extent is, or should, this expression be in French?

After one has thus discovered the French which functions in the community life, or which should function there, he then can proceed with reasonable certainty to arrange a curriculum which will fit persons for using the amount and character of French that is to be used. Beyond what functions in some way, public education is not warranted in going.

After the curriculum-maker has discovered the entire French element that should function within his American community, then let him take up the other

foreign languages, particularly those used by large populations: Spanish, Italian, Scandinavian, German, Chinese, Russian, Japanese, Portuguese. Among fully-fledged Americans, in most parts of our country, it is probable that several of these languages function about as fully as French, and should be considered on the same grounds.

Let us emphasize one caution. The man who does not value human culture in the general community life, and who does not look upon the full expansion and flowering of the personality as a *sine qua non* for properly living one's life, is scarcely fitted to be a curriculum-maker for general education. And yet he must look upon human culture for what it is. He must not be misled by terms. He should see for himself the finer things of our twentieth century culture, where this is at its best. In his analyses, therefore, he should discern *every* way in which these languages are functioning in the more subtle matters of the community living, and the ways they ought therein to be functioning. He should see all elements of man's culture, and value these alien language elements in proportion to the part that they actually play in man's total culture. Those who are demanding "culture," certainly are not asking for anything other than a *functioning culture.*

This demands therefore that the curriculum-maker look also at the indirect ways in which foreign languages may function. He will examine them as *means* of achieving objectives other than abilities to use the

languages *as languages*. In his analyses here, he will find himself in a region that is very obscure. There is some evidence, however conclusive it may ultimately prove to be, that the alien languages have a considerable rôle to play in a well-conducted American life.

So vital is language in human life, so close does it lie to thought and feeling and the well-springs of human action, that it would be strange indeed if it were not a field of fruitful play. A generous and diversified play is nature's method of calling into being one's general powers — those more deep-lying than the specific abilities, and of which the latter are special manifestations. One's general language powers *grow* up largely through abundant language-play experience. The fuller and more diversified, within limits and with certain qualifications, of course, the larger the amount of general growth of powers — until the potential maximum is reached. But there cannot well be language-play experience, except as there is also subjective thought and feeling of which the language is vehicle; and this also is play. And this thought and feeling at the same time makes its contribution to one's general unfoldment in the achievement of certain of the non-language objectives.

In the present state of our knowledge no one can be dogmatic, whether for or against the use of foreign languages as vital educational experiences of play type. The probabilities are in favor of a generous use of them as "extras," — so long as it is strenuous and zestful play-experience, largely spontaneous and self-

directed; and so long as it is adjusted in amount to all the other things which should make up a well-balanced program of experiences. Education should proceed upon the basis of the probabilities until scientific investigations have shown us the verities.

On the basis of these probabilities, rather than upon the findings of an analysis of actual language uses, we suggest for languages as extras the following illustrative platform of basic principles and assumptions. Any curriculum-making group should formulate its own series; and it may differ widely from the one here presented. When this is carefully done, numerous problems that will arise relative to the details of the courses are disposed of in advance.

Modern Languages

1. Foreign languages are justified in public education in the degree in which they function in the life of the population; or rather in the degree in which they *ought* to function, whether directly or indirectly.

2. In the general training, while foreign languages may be of value, they probably are not essentials. They should be offered as opportunities in addition to the essentials. They should be optional, not required.

3. In our country, for non-vocational purposes, those who will use a modern language sufficiently to warrant studying it, will use it mainly for *reading;* and infrequently for a little simple oral communication.

4. One should read a foreign language in the same way he reads his mother tongue; and for about the same purposes.

5. The basic experience in learning to read a modern language is to read it abundantly. All else should be reduced to a minimum.

6. Reading should begin in the very beginning of the study; and it should be fairly abundant by the end of the first semester.

7. Translation serves no sufficient purpose — after a beginning has been made. It should be reduced to a minimum in the first year, and omitted thereafter.

8. Modern language reading experience should be wholly (or mainly) on the play-level — pleasant but strenuous intellectual play — strenuous because of the abundance of reading to be covered, not because of the steepness or the drudgery of the climb.

9. A genuine reading ability demands that the students read ten or twenty times as many pages per year as now ordinarily covered in the usual type of school.

10. The content of the reading on each level should be adapted to the general mental maturity of the pupils. On the thought side, it should be interesting; and not difficult.

11. In grading readings, there should be consideration of the complexity of grammar, vocabulary, and story or thought-content.

12. Pupil-readings, from recommended graded lists, should be largely self-chosen.

13. After the start has been made, a language is to be mastered in ways and under conditions in which it is to be used after school days are over.

14. After a proper start is made, a reading ability can be acquired by those who want it enough to acquire it, without much labor on the part of the teachers.

15. The student who requires an undue amount of teacher-effort to keep him going will not profit sufficiently to warrant giving him the language.

16. A forced study of language will not result properly in attaining any of the objectives. If not mastered on the play-level, for the joy of the experience and of the

achievement, it will not be mastered in any profitable way.

17. The language results being the same, as shown by supervisory tests, self-directed home reading of foreign language books and newspapers should be accorded larger credit than reading at the school which demands teacher stimulation and labor.

18. To introduce the necessary oral and social element, much of the reading and most of the oral element should be carried on by foreign language clubs or groups of students involving a maximum of student self-direction and management.

19. If after proper opportunities and stimulations have been provided and a proper start has been made, a pupil has not sufficient interest in a language to exert himself in its mastery without much help from the teacher, then he should at once discontinue the study.

20. Power of full comprehension is to be developed through much reading rather than through complete understanding of every phrase read. Attempt to secure the latter is a most wasteful process.

21. The school should provide for the maintenance of a foreign language once learned — as long as the pupil is in school.

22. Except as a language functions during the learning and except as there is pupil-expectation that it will continue to function after the learning, the learning process will be so anæmic as not to be worth while.

23. One who is learning or using a modern foreign language should do a portion of his reading of history, science, literature, current news, etc., in that language.

24. As one learns to read a language he will also learn to speak it in a simple way — since language is primarily an oral affair and is scarcely felt to be a language except as it is put into oral-articulatory terms.

25. In beginning a foreign language for reading purposes, the oral element should be sufficient to develop pro-

nunciation habits and the necessary auditory-articulatory imagery.

26. For those who do little more than read the language, nothing more than a moderate accuracy of pronunciation is worth striving for.

27. Except for certain simple speaking of the language with no great fluency, range of vocabulary, or even grammatical correctness, training in idiomatic speaking will come *after* fullness of reading experience. (Under usual American conditions. It would be different were one living in the foreign country.)

28. Not much technical grammar is needed prior to beginning the reading.

29. For those learning to read the language only, composition serves no sufficient purpose.

30. Fundamental language-experiences should be used in maximum measure; accessory, in minimum measure.

31. A "knowledge of the life and thought of foreign nations" — many foreign nations — is now so important that we cannot afford to trust the matter to the usual amount and character of reading in one foreign language.

32. The use of foreign languages for deprovincializing our population, if justifiable, appears to call for a moderate knowledge of several languages rather than a highly intensive and accurate knowledge of but one.

33. After one has learned to read one foreign language, he finds a second much easier, and a large degree of self-direction quite possible. The third and fourth languages are still easier and can be left mostly to self-direction.

34. Foreign languages for general training will lay a foundation for that further development of foreign languages which sometimes is needed for vocational purposes. The general training in itself, however, open to everybody irrespective of vocations, will not go further than demanded by the objectives of general training.

35. When a foreign language is demanded by one's vocation, the character and degree of proficiency in oral, written, and reading uses is to be determined by the needs of the vocation itself. While the general training may have laid the foundation up to the limits of the general training, beyond this point it is to be administered only to those who enter the vocation; and it is to carry them on to the point demanded by proficiency in that vocation.

36. When a language is prescribed or recommended for vocational purposes, it is not then to be opened to the total public-school population for general training purposes. If included in general education it must be justified on some other basis than the vocational one.

37. Rarely will high schools give vocational courses in which a foreign language is one indispensable ingredient. The vocational argument therefore will apply but slightly to foreign languages in the high school. They will there be justified in the main by the general training or not at all.

38. No one should specialize in modern languages, except as it is vocational specialization.

39. Where immigrant children in our public schools are already bi-lingual, the schools should develop power to use both languages. This is the class of individuals from which should be drawn those who are to fill vocational positions demanding fluent use of two languages. It is a practicable and an economical method.

The Objectives

An examination of the abilities and personal qualities enumerated as educational objectives in Chapter II reveals none which make a clear demand for foreign languages. This leaves the latter outside the zone of basic general training. So far as they are employed, it appears they must be for general education in the realm of the problematical extras.

The writer is much embarrassed in attempting to present even an illustrative list of tentative objectives for foreign languages as extras. The following may at least hint at their purposes:

1. The ability to use the oral forms of one or more modern foreign languages in a simple way without any great degree of either fluency or correctness.
2. Ability to read one or more modern foreign languages with moderate ease and fluency and with enjoyment.
3. An improved understanding of, and sympathetic attitude toward, the people whose language is thus in some measure mastered.
4. Some reduction in the degree of one's provinciality; or otherwise expressed, some increase of cosmopolitan spirit and attitude.
5. A certain degree of furtherance of one's language abilities in general, including that of the mother tongue, through this extension and diversification of one's language experiences.

This series of objectives probably does not go far enough to satisfy the specialists in modern languages. On the other hand, it probably goes much beyond what is approved by the opponents of modern languages in the curriculum.

Pupil Activities and Experiences

With the working objectives before him, the curriculum-maker should first decide upon the general type of pupil activity and experience which will enable the pupil to arrive at the goals set up. We suggest such a statement as that of which the following is a beginning:

1. The pupil should hear the language spoken upon the level of his powers to understand.

2. He should himself speak the language in a simple way — without striving for fluency in extended discourse or any high degree of correctness.
3. He will read an abundance of interesting materials, always upon the level of his advancing understanding of the language for his reading purposes.
4. He will frequently carry on simple conversation with his associates in the foreign language.
5. He will sing songs which employ the language studied.
6. He will employ games which employ the language studied.
7. He will read newspapers printed in the foreign language.
8. In his readings of history, science, literature, and the like, in the several school departments, he will often use collateral books printed in the foreign language.
9. He will, etc., etc.

This list of pupil activities and experiences should be much extended. After this is done it can then be used for guidance in planning the detailed foreign language activities for each of the grade levels.

CHAPTER XVIII

LATIN

THE plan of activity-analysis used in discovering the place of modern languages in American life should be used as well in discovering the ways in which Latin functions in the life of to-day. As one examines the community situation, one discovers such things as the following:

1. Among members of the community, Latin is never used as the instrument of one's speech. Therefore there is no need of the ability either to speak it or to understand it in spoken form.

2. Members of the community do not use Latin for their written communications. For this purpose they need neither to write it nor to read it.

3. No one reads Latin for getting at the learning of the world. This learning does not exist in the Latin. The most trustworthy information about anything whatever is that which has come from the latest researches, and which takes into account and revises all previous thought or information on the topic. The science, history, sociology, and the like, of a century ago were very primitive; and if used for our present-day purposes would be very misleading. If now we go much further back to the writings of twenty centuries ago, we find the learning therein presented very

primitive indeed. Probably no one would be misled by it since no one would take it seriously enough to be misled. As a source of information, even in matters of history, social science, the Græco-Roman civilization and the like, it is unreliable. The writers of Rome did not know the history of Rome, nor the social and political forces there operative, with anything like the clearness and completeness with which we know them to-day. Methods of historical research and interpretation and the technique of sociological, economic, and political analysis are recent developments. They have given us a fullness of information relative to the Roman episode in human history beside which the sociological and historical learning of the Latin literature is puerile.

4. Members of the community do not read the literature of Rome as a fruitful leisure occupation. There is no prospect that they will ever do so. As compared with our modern literatures, that of Rome was poor and barren. Certainly, not until our people come to read our own rich literature in far greater abundance than at present can we expect them to develop cravings for that of ancient Rome.

5. Men and women of to-day do not use Latin as the language-vehicle or instrument of their thought. They could not do so if they wished, since the Latin vocabulary is too primitive. It will not carry the complex diversified thought of to-day.

Now these are all of the ways in which a community may use a language *as a language*. We must conclude

that Latin, in our American cities, villages, and open country does not function as a language.

The non-functioning of the Latin as an instrument of thought or communication in the community life proves conclusively that the ability to use Latin as a language, whether for speaking, writing, or reading, is not a proper objective of general education.

This does not prove, however, that Latin is not to be used for educational purposes. The experience and the information may be *means* to the achievement of other objectives, the legitimacy of which are indisputable. Two things especially are urged by the Latinists:

1. It helps English to function better. There are several ways in which this is said to occur, but the major contention is that the Latin vocabulary functions in the English vocabulary. A half of common English words are descended, mostly through the French, from the Latin. One should know the ancestral forms, we are told, in order that he may make the living forms properly function. Underlying this assumption is the further one that one can easily learn the meanings of Latin words without tracing their pre-Latin genealogy, but that he cannot similarly learn the meanings of English words without their pre-English history.

It is undoubtedly true that a knowledge of the simples out of which our more complex terms are built is of great service in dealing with these complex terms. The simples make up a vocabulary-alphabet, so to speak. One cannot use English effectively without a

certain skill in handling English prefixes and suffixes. Of these there are a few dozen, derived originally from three or four languages. But they are English now; they have been completely assimilated. It is as easy to learn them as elements of the English tongue as it is to learn them as the elements of an alien tongue. It is probably easier, since one imbibes their meanings relatively unconsciously. A little attention to them is needed for making one conscious of them, and in fitting one for a generalized use of them. In addition, there are several score, possibly a few hundred, word-simples, used as basic material in common word-compounding. It gives one a vocabulary-alphabet, so to speak, to be able to handle these materials with understanding and skill. Knowing the elements, one can interpret the meanings of unfamiliar terms in which they occur; choose the right word where there are perplexing alternatives; and occasionally coin new terms.

These materials also are elements of the English tongue. In the main, their basic meanings are learned as one imbibes unconsciously his understanding of the English. At a later stage, in making him conscious of the elements, and in breaking such of them out of the compounds as can be serviceable, so that he may use them more freely as vocabulary-alphabet, it seems advisable to introduce the ancestral terms, whether Latin, Greek, or Anglo-Saxon. This etymology calls for nothing more than the original words together with sometimes the combining forms. Since the number of word-simples that can be really serviceable is not great,

this task is a lighter one than the usual study of any one of the obsolete languages. Approached in this way it is easy to remember these elements — where one needs them and wants them — because they are things already largely known from one's more fundamental and unconscious vocabulary-mastery. The etymological process is mainly for raising them to the level of consciousness.

Researches have not yet been made to show what word-roots are serviceable enough for this purpose to warrant the etymological study of them. It is probable that the list is not so long as the linguists would have us believe.

The value of the etymology for vocabulary is often greatly exaggerated. Linguists live so fully in a realm of verbal associations that they seem to forget that the words of one's vocabulary are primarily to be associated with the realities to which they refer; and that the basic experience in effecting these associations is vital contact with the realities themselves, with the verbal element used at the same time as a vehicle of the subjective experience. Vocabulary grows out of active experiences verbalized at the time. It is not primarily a matter of transmuting one language into another. As a matter of fact, this latter appears to be for most persons a quite minor factor in vocabulary-building.

It is probable that the vocabulary of all classes of the population for their non-vocational purposes can be sufficiently taken care of in the manner mentioned, without the usual type of ancient language study.

This is not to lose sight of the probability, or certainty, that if one will learn to read Latin and Greek, he will be still better prepared for using his etymology as a help to his English. But the additional ability thus gained is probably too small to be worth any great cost.

The argument that physicians, for example, need both Greek and Latin because of their special vocational terminology is entirely irrelevant. If it can be proved that the physician should be able to read Greek in order to handle his vocational terms, all that this proves is that the physician should learn to read Greek as a part of *his vocational* training. It presents no reason whatever for Greek as a part of general education. A specific vocational need proves nothing as to what is needed by men and women in general. Let those who are drawing up the vocational programs take care of *all* of the vocational needs. When those who are training physicians tell us that on the basis of activity-analysis it has been proved that physicians must have Latin and Greek for the sake of their vocational proficiency, then let it be placed in the vocational curriculum of physicians.

To conclude this section, there is no sufficient proof that the Latin translation and composition ability functions in one's current English vocabulary sufficiently to warrant years of Latin study of usual type.

Most of the other claims that Latin helps the English to function better bear the marks of special pleading.

2. Latin functions in the community life, we are further told, in the intellectual virility, endurance, and

nimbleness that comes from having scaled this austere and difficult intellectual height. The language itself may not be greatly used later in the affairs of life any more than one's youthful ascent of the Matterhorn may later be used. Simply both are zestful experiences of the kind out of which the virile man is born.

Here doubtless is the strongest argument for the Latin. The language, they say, is one of innumerable opportunities for the intellectual adventure of exploring fields new and different and alluring. One's best general intellectual exfoliation comes from thus ever exploring realms hitherto new and strange, prompted mainly by the zest of the experiences, rather than by a prosaic consciousness of the immediate utilities: the spirited, strenuous, and joyous activities of intellectual play. The fields of such high play are numerous: histories, literatures, travels, industries, politics, institutions, sciences. In these, one explores fields of reality. But a language is also a field of reality to be explored; and for many persons an alluring one. There are divers fields of intellectual opportunity besides the alien languages, and many of them are far more important. But there is probably enough demonstrable value in the Latin for etymology and general language-sense, in the Spanish for pan-American good-will, in French, German, Italian, Russian, and the others for humanitarian attitudes and understanding, to justify many at least in finding a part of their intellectual adventuring in this field of the alien languages.

This is not to be a process of formal discipline

through drudgery; but one of growth through zestful experiences. The student who sets out to explore any foreign language field should do so of his own choice. He should have a desire for the intellectual experiences. He should set out with eager anticipations, in the spirit of adventure. He will find it a good stiff climb, but he should climb with pleasure, do his own climbing, and do it with zest and speed. Such an individual is of that rare metal that can profit from the experience. All others will leave the languages alone. For them there are numerous other fields of intellectual emprise from which they can profit in a similar way.

The activities of the well-rounded personality are multifarious. The play experiences out of which the abilities to perform these activities so largely grow, should be proportioned somewhat according to the values of the abilities to which they more or less unconsciously contribute. The Latin intellectual play is but one type in a wide range of desirable types of intellectual play. It should not have more than its due share of the time. Many of the other types are essentials to any proper growth of the man; but Latin is not an *essential*. It should not therefore be permitted to encroach upon the time to be allotted to essentials.

One is venturesome indeed who attempts to formulate even an illustrative platform of principles and assumptions for this department. The following is a revised form of the one presented for the purpose in Los Angeles:

Guiding Principles and Assumptions

1. Latin should be used as an educational means in the achievement only of objectives, the need of which are proven by community analyses which have been made without reference to the means to be employed in attaining them.
2. The educational objectives of Latin, if any, must be something other than the ability to use Latin as a language.
3. For those who have learned to read Latin with zest and pleasure, it functions: (1) In English vocabulary; (2) In commonly used Latin terms; (3) In an increased understanding and appreciation of language in general; (4) In increased understanding of the Roman people; (5) In the general intellectual spirit and attitudes created by climbing these long and difficult intellectual steps.
4. The etymological elements of English will be employed in developing one's English vocabulary.
5. Etymological study of English should be a portion of the essential English training expected of all normal individuals.
6. For the large majority of persons, the Latin etymological elements can be made sufficiently serviceable without any mastery of Latin as a language. They can secure them for the Latin just as they now usually secure them for the Greek, Anglo-Saxon, and Scandinavian portions of our language.
7. An unknown percentage of specially capable individuals should probably learn to read Latin as the *most effective* means of developing an understanding and appreciation of the Latin elements in the English. There is an analogous justification, in lesser measure, for their also learning to read Greek and Anglo-Saxon.
8. For a few rare individuals, the percentage unknown, the reading of Latin literature may be an enjoyable and profitable intellectual leisure occupation.

9. The great majority of our population seems unable or unwilling to approach and to master the Latin in that spirit and with that zest and self-direction that makes the experience worth the time and effort.

10. For the few who can profit, the study should probably be seen as playing a relatively superficial rôle, and should be administered accordingly.

11. In the general training, Latin should always be an "extra," and never allowed to supplant or interfere with essential matters.

12. Except as Latin is specifically vocational — a thing practically non-existent on the public-school level — no one should specialize in Latin in the public schools. It is too minor an ingredient of general education. It should never be one's major.

13. The department of Latin need not burden itself with objectives which can be better taken care of by other departments, the necessity of whose labor is without question; for example, Roman life and institutions, English style, etc.

14. One can more fully and effectively enter into Roman life, the Mediterranean civilization, classic mythology, legend and history, through the vernacular than through the Latin.

15. One who has the ability to read Latin with fluency and pleasure can secure all of the values to be expected from its use as a means of general education.

16. Where Latin is studied as a language, schools should use the most effective and economical method of developing the ability to read the language easily and fluently.

17. The basic experience in learning to read Latin is to read it abundantly. All else should be reduced to a minimum.

18. In the beginning there should be a generous amount of easy repetitious reading; and it should be reading, not translation.

19. After a proper beginning has been made, translation serves no sufficient purpose — except possibly occasionally to serve as a check on the reading. It should be reduced to a minimum. Most of the Latin reading should be simple and interesting narrative.

20. The classic literature was never written for teaching purposes; certainly not for training beginners in the language. It should not be undertaken until one reads the language in a way that can be called reading it — not merely stumbling through it.

21. Story or thought-content being suitable to the pupil's maturity and interests, reading materials should be graded on the basis of difficulty of vocabulary and sentence-structure.

22. Latin reading experience should be on the play-level — pleasant but strenuous intellectual play — strenuous because of the abundance of the reading, requiring concentration, not because of the steepness of the climb or the quantity of the drudgery.

23. The road of drudgery has not been a road of success in Latin training. It enabled Latin to be an excellent selective device. The other fruits have been meager.

24. Not much technical grammar is needed prior to beginning the reading.

25. The actually needed grammar can be developed alongside the reading; the rest can be omitted.

26. Fundamental language experiences should be used in maximum measure; accessory, in minimum degree.

27. None of the objectives demands Latin composition (so-called).

28. The student who requires much teacher-effort to keep him going will not profit sufficiently from the language to warrant the labor of forcing it upon him.

29. After a proper start is made, the main thing needed is reading by the student; not teaching by the teacher.

The latter will provide conditions and stimulations, but class-meetings need not be frequent.

30. Any language study which has as its *primary* purpose the improvement of English should be under the direction of the English department.

The Objectives

An examination of the comprehensive list of abilities in Chapter II reveals only one which appears to make any clear demand for any understanding of the Latin. This is, "A command over an adequate English vocabulary." But as already explained, the need of Latin for this purpose is not great enough to place the language in the basic training of general education. Obviously, it can be only an extra.

A working list of objectives which is in harmony with a functional conception of education is difficult to locate. For the few who can take the Latin as an extra with profit, the following working list of objectives is suggested:

1. The ability *to read* the Latin as a language with at least moderate fluency; and with understanding and enjoyment.
2. An increased command over one's English vocabulary.
3. An augmented appreciation of English words through the vision which the Latin gives of their genesis.
4. Some degree of increase in one's general language abilities through this extension and diversification of one's language experiences.
5. The effects upon the personality, whatever these may be, of successfully prosecuting a strenuous and sustained piece of intellectual work.

If one will learn to read the language with relative ease and pleasure, then it seems that the other objectives, whatever they may be, are attained, or may easily be attained, at the same time. Probably, therefore, the curriculum-maker will set up as his major objective the first of the above.

CHAPTER XIX

ADMINISTRATIVE SUGGESTIONS

Within a school system, those who are nearest the detailed labors are the ones who should take the initiative in planning the details of those labors. The teachers of chemistry, for example, should take the initiative in planning the details of the course in chemistry. The teachers in each department should initiate in planning the detailed labors within their several departments. They will not make ultimate decision as to the details; but they will formulate the original proposals.

As the teachers initiate plans as to the details, the principal of the building will independently initiate the more general plans and policies which are to control in the total work of the building. Whether it be elementary or secondary school, the principal should have clearly formulated policies relative to every department and grade of the training. He needs this for his guidance, leadership, and coördination of all of the factors. In the curriculum-making, he is in the position of the director of an orchestra who must coördinate all of the parts in the making of one harmonious whole. Lacking this leadership and coördination, the initiative on the part of the teachers but results in disintegration and incoördination on the part of the several relatively autonomous and irresponsible departments.

The principal also is nearer the educational labor to

be accomplished in his district than the superintendent. He should therefore initiate the policies and plans for his particular district. He will not have final decision, however.

As the teachers plan the details and as the principals plan for the specific needs of their buildings, the superintendent at the same time will independently plan on a still more general level the education which is to be accomplished by the entire organization. He should have definite plans for the labors of every school, every department in the system and for each of the grade levels. He cannot be guide, leader, and coördinator of the professional factors except as he has his educational policies thus clearly defined. He will then use these general plans and policies as he considers and approves the educational plans initiated by the several portions of the organization. In curriculum-making, he and his professional staff will thus provide the most general leadership, direction, and coördination. Where problems arise, he will make the ultimate decisions, so far as these are to be made by the professional organization.

The professional organization as a whole has been created to perform a specialized labor for the community. It receives its commission entirely from the community. What it is to aim at is dictated, whether clearly or vaguely, by the public opinion of the community. The schools should do what the community sanctions; they should not do what the community does not sanction.

The community has established its representative school board to define its judgments relative to the various matters involved; and in its representative capacity, to take the necessary legal steps. The school board, therefore, should have definite policies relative to the labors which are to be accomplished by the schools. In the nature of the case these policies must be general. They should, however, be sufficiently definite as to be serviceable as guides in considering the more specific plans and policies of the superintendent and professional organization in general. In curriculum-making the board will not initiate the details of any of the plans. Their responsibility is carefully to examine the plans formulated by the professional organization in the light of their policies. They should be certain that the plans proposed will eventuate in the educational results needed by the community.

We have said that those who are nearest the educational procedures should have a voice in initiating the plans for those procedures. As education becomes more and more the process of developing personal qualities and abilities in human beings, as it becomes a process of helping children in all of their experiences to grow up in the right way, the educational responsibilities of parents become more and more evident. They have much to do with guiding the detailed experiences out of which child development emerges. It appears therefore as we introduce more and more of the project-activity, and part-time work at home or otherwhere in the community, we must

more and more provide for coöperative planning on the part of the parents. In spite of their obvious unpreparedness, there are certain things which they can do even at present. Power on their part to do things better than is possible at present is to be developed through experience in doing things as well as they can. The over-domination of the theory of specialization, which has resulted in the isolation of the schools from the community life, has created the belief and the attitude on the part of both lay and professional that the layman bears no responsibility for planning the procedures of education; and conversely that all responsibility for the development of the children is turned over to the professional organization. Both the conceptions and the practices are mischievous in their results.

In the planning of the detailed procedures, it appears that it is the teachers, nurses, play directors, and parents all together who should coöperatively plan the detailed procedures. The line of approval of the plans will be through principal, superintendent, and board, as indicated.

On the functional or work-level, the experience of those who are most skillful in the actual labors should be fully utilized. Education is the process of preparing individuals for their adult responsibilities and activities. Those who are performing these activities in the world of practical affairs, under responsibility, and doing it successfully, are probably the ones who can know most intimately the qualities and abilities which one

should possess in order to be successful in that field. In formulating a curriculum in printing, the successful printers of the community have much valuable experience to contribute. And this is true of curriculum-making for each occupation. In civic training, those who have specialized in civic leadership have much to contribute. In preparing for the maintenance of the community health, those who have been providing the community leadership in health thinking and practice possess experience which should be utilized in fullest measure. In the same way those who provide the community leadership in any field of human functioning have had experience which should be drawn upon in planning the training of the oncoming generation.

The day is past when the superintendent can sit down alone in his office and formulate the curriculum for his schools. Current developments indicate that the day will soon be past when the professional organization as a whole can sit down in total isolation from those from whom they receive their commission and formulate a curriculum without consulting those for whom they are agents. The latter is like an architect's drawing up plans for a new building without consulting the wishes of the owner.

Board and superintendent will formulate their general curriculum plans and policies relatively independently. But in conference they will harmonize differences. In case of disagreement, the board will decide.

Superintendent and principals will formulate their

general and semi-general curriculum plans and policies relatively independently; but in conference they will harmonize their plans. In case of disagreements which will not harmonize, the superintendent will decide.

Principal and teachers will formulate their semi-general and detailed plans relatively independently; but in conference they will harmonize their differences. Where there remains disagreement after conference, the principal will decide.

In the dealings of the professional organization with parents and other lay groups, each will relatively independently formulate its curriculum plans and policies. Then in the conference of their representatives, they will bring them into harmony with each other. In case of disagreement the general public decides. Their legalized spokesmen are their representatives, the board of education.

The impression is not to be left that the order of these labors is to be that mentioned in the foregoing paragraphs. As a matter of fact the labors will be simultaneous and intermingled all along the line. Yet in a general way the more generalized levels of initiative appear naturally to precede the more detailed ones. This is implied in the act of delegating the labors. On the other hand the function of overhead approval of the specialized labors naturally comes subsequent to the performance of the latter.

The foregoing suggestions appear to comply with such principles of educational administration as seem to be partially established as the results of experience.

It must be admitted, however, that these principles are as yet pretty uncertain, with the consequence that we cannot be dogmatic relative to the suggestions.

If the suggestions are valid, then the working form of organization appears reasonably evident. The teachers of the several departments of the work should be organized for planning the details. The principals should be organized for considering and planning the curriculum arrangements for the several buildings as the larger educational units. The superintendent together with his professional staff of special supervisors should be organized for formulating the most general professional plans and policies.

The results of the deliberations at the head of affairs will be passed down the line. It will be not as dictation but as suggestion as to the ways things appear from their more generalized point of vision. On the other hand, the results of the deliberations of those who are nearest the detailed labors will be formulated and passed up the line for suggestion as to the ways things look from their more specialized point of view. As the vision of the different levels is thus passed on to each other, each can make the corrective which is necessary because of his special position within the field. The vision, judgment, understanding, and decision of each level can thus gradually become the vision, judgment, and decision of all the levels. Only thus in the management can we have both efficiency and democracy.

INDEX

Ability, nature of, 30–31.
Accessory training, 51, 171, 263, 277.
Activity-analysis, 8–11, 33–35, 38–40, 97, 165, 219–21, 256–58, 267–69.
Additional opportunities. *See* Extras.
Administration of curriculum-making, 1–6, 32–43, 280–86.
Æsthetic appreciation, 85, 220–23, 226, 231–33.
Aims of education. *See* Objectives.
Algebra, 67, 157–61.
Amateur ability in fine arts, 197, 226, 233.
Analyses. *See* Activity-analysis.
Arithmetic, 146–50, 158–59.
Art, in general education, 69; in community life, 219–25; objectives, 225–26; guiding principles, 226–28.
Articulation of elementary and secondary education, 30, 43, 59–61, 96.
Astronomy, 21, 136, 142.
Avocations. *See* Leisure occupations.

Basic training, 69–72.
Biology, 21, 136, 142.
Botany, 21, 136, 142.

Care of pets and other live animals, 192, 208, 214.
Care of the person, 197.
Chemistry, 21, 136, 142.
Citizenship training. *See* Social studies.
Civics, 120–23.
Clothing activities, 193–95, 208, 214.
College, Junior, objectives, 30; general program, 68–75.
Community needs, in general, 7–29; analysis, 33–41; need of literature and reading, 76–80; science, 129–33; mathematics, 146–54; health, 165; practical arts, 177–85, 199–201, 209–13; art, 219–25; music, 229–32; modern language, 256–60; Latin, 267–74; English, 238–42.
Community responsibility in curriculum-making, 36, 38–39, 281–86.
Composition. *See* English.
Comprehensive list of abilities, 11–29, 43, 89–90, 101, 141.
Constants, 65–66, 68–70.
"Consumer" education, literature, 88; science, 135, 144; mathematics, 159; practical arts, 182, 203, 215–16; art, 221, 226; music, 231.
Cooking, 195–96, 214.
Culture, 258.
Curriculums, differentiated, 41–42, 68–72.

Departmental organization, 72.
Design. *See* Art.
Diagnosis, educational, 171, 202, 215–16, 248; social, 35–36.
Differentiation. *See* Individual differences, *and* Specialization.
Discipline, general, as objective, 32–33; in mathematics, 155–57, 159, 161–63; Manual training,

199; modern languages, 259, 265; Latin, 272–75, 278.
Discussion, 57, 60, 95, 104, 113.
Domestic Arts. *See* Practical Arts of Women.
Drawing. *See* Art.

Economics, 119–20.
Education, concepts of, 44.
Educational guidance, 68–75.
Electives, 66–67, 68–70.
Electrical appliances, 189–90, 207, 214.
Elementary school, objectives, 30; pupil activities, 60–61; general program, 68–72.
English language, in general education, 69; manner of functioning, 238–39; purposes and methods, 239–46; guiding principles, 246–52; objectives, 252–53; pupil activities, 253–55.
Errors. *See* Diagnosis.
Etymology, 269–72, 275.
Exploratory courses. *See* Short-unit courses.
Extra-mural activities, 49–51, 85, 134, 138, 171, 204, 217, 227, 235.
Extras, 69–72.

Financial activities, 197–98, 208, 214.
Fine Arts. *See* Art, Music, Literature.
Food Activities, 195–96, 214.
Foundational education, 63–65.
French, 257.
Functional education, 65–66.
Fundamental training, 51, 171, 263, 277.
Furniture repair and construction, 187, 207.

Games and sports, 12–13, 166, 170–73.
Gardening, 190–92, 208, 214.
General education, 63–75.
Generalization, in general, 58–59; literature, 86–87; Social studies, 103, 112–13; history, 116; geography, 118; economics, 119; civics, 122; psychology, 125; science, 139–40.
General Mental Efficiency, 20–25.
General Reading. *See* Literature.
General Social Contacts and Relationships, 18.
Geography, objectives, 102–06; relation to other subjects, 109–12; guiding principles, 117–19.
Geology, 21, 136, 142.
Geometry, 159–61.
Grade objectives, 43.
Grammar, 11, 33, 241, 246, 248–54.
Guiding principles and assumptions, literature, 81–87; social studies, 107–15; history, 115–16; geography, 117–19; economics, 119–20; civics, 120–23; occupations, 123–24; mental traits, 125–26; science, 136–41; mathematics, 158–62; physical training, 170–75; practical arts of men, 202–06; practical arts of women, 215–18; visual art, 226–28; music, 233–37; modern languages, 260–64; Latin, 275–78; English language, 246–52.
Gymnastics, 166, 171–74.

Habits, 22–24, 30–31.
Handwriting, 12, 49, 50, 241, 243, 245, 248, 252, 254.
Health training. *See* Physical training.
High school, senior, objectives, 30; pupil activities, 60–61; general program, 68–75.

History, objectives, 102–06; relation to other subjects, 109–12; guiding principles, 115–16.
Home economics. *See* Practical arts of women.
Home management, 188, 207, 213–14.
Home-planning, 187–88, 207, 213.
Home repairs, specific activities, 186–87; objectives of manual training, 207.
Hygiene. *See* Physical training.
Hypothesis, 10, 99–101.

Incidental education, 153–54. *See* Extra-mural.
Indirect observation, 19, 53–56, 76–77, 135–36.
Individual differences, 41–42, 61–62, 66, 71–72, 156, 171, 227.
Ingredients of any specific ability, 30, 31, 21–25.
Interests, 21, 78, 126, 132–34.

Job-analysis, 29, 97.
Junior High School, objectives, 30; pupil activities, 60–61; general program, 68–75.

Kindergarten objectives, 30.

Laboratory activities, 47, 59, 134, 200.
Language, objectives, 11–13; as experience, 53–56; English, 238–55; modern, 256–66; Latin, 267–79.
Latin, in general education, 69; in community life, 267–69; relation to English, 269–72; general discipline, 272–74; guiding principles, 275–78; objectives, 278–79.
Laundry, 195, 214.
Lay participation in curriculum-making. *See* Community Responsibility.
Leisure occupations, objectives, 18–20; preparation for, 63–64; literature, 79, 83, 90; relation to social studies, 104–05, 111, 115; science, 132; mathematics, 155–57, 161; physical training, 166, 170–73; avocations, 183–84, 197; art, 225–26; music, 229–37; modern language, 259–60; Latin, 272–74.
Length of training, 73–75.
Literature, in general education, 69; functions, 76–80; guiding principles, 81–87; objectives, 90–93; pupil activities, 94–96; as social study, 124; foreign, 262; ancient, 268.

Maintenance of physical efficiency, 12–15, 165–176.
Major fields of human action, 8–9, 11–29.
Manual training. *See* Practical arts of men.
Mental traits and tendencies, 125–26.
Methods, educational, 44–62. *See* Guiding principles, *and* Pupil activities.
Minimum essentials, 42.
Modern languages, in general education, 69; in community life, 256–58; general discipline, 258–60; guiding principles, 260–64; objectives, 265; pupil activities, 265–66.
Moral training, 15–20, 21–26. *See* Literature, Social studies, Science.
Music, in general education, 69; in community life, 229–32; objectives, 232–33; guiding principles, 233–37.

Natural science. *See* Science.

Objectives, general discussion, 7–11; social intercommunication, 11–12; health, 12–15; citizenship, 15–17; social, 18; leisure occupations, 18, 20; mental efficiency, 20–25; religious, 25–26; parenthood, 26–28; unspecialized practical arts, 28–29, *and* 186–98; occupational, 29; literature and general reading, 90–93; social studies, 102–06; science, 141–43; mathematics, 162; physical education, 166–68; practical arts of men, 207–08; practical arts of women, 213–15; drawing, 225–26; music, 232–33; English language, 252–53; modern languages, 265; Latin, 278.

Observation, leisure occupations, 18; fundamental activity, 45–48; indirect, 53–57; literature, 76–77, 90; social studies, 104, 110, 115, 119, 120, 123, 125, 127; science, 132–36.

Obstacles to curriculum-making, 2–3, 33, 36, 39, 44–45, 97–99.

Occupations, study of, 75, 123–24, 200, 208, 215.

Oral Report, 56.

Parental responsibilities, 26–28.

Participation, general type of experience, 48–53. *See* Vicarious participation.

Part-time education, 49–51, 121, 217.

Patterns of conduct, 47–48.

Physical training, in general program, 69; objectives, 12–15, 166–68; guiding principles, 170–75; pupil activities, 175–76.

Physics, 21, 136, 142.

Pictures, 56–57, 60, 115, 118, 138.

Place of educational experiences. *See* Extra-mural activities.

Play, objectives, 12–13, 18–20; as process, 63–65; intellectual play, literature, 76–79, 83; social studies, 104, 111, 115; science, 132, 137; mathematics, 155–57; physical training, 166, 172–74; modern languages, 259, 261; Latin, 273–74, 277.

Plumber, 97.

Political science. *See* Civics.

Practical activities, 48–53.

Practical Arts, general, 177–98; for men, 199–208; for women, 209–18.

Practical Arts of Men, in general education, 69; values, 199–201; guiding principles, 202–06; objectives, 206–08.

Practical Arts of Women, in general education, 69; place and purposes, 209–13; objectives, 213–15; guiding principles, 215–18.

Preparation for college, 30, 75, 85, 153.

Principal, 280, 284–86.

Problem-solving, 58, 113, 118, 119, 139, 158.

Program of studies, 69–70.

Progress objectives, 43.

Project-method, 50, 204, 217.

Prolonging and intensifying experiences, 57–58.

Protection from fire, 190, 208, 214.

Psychology, 125–26.

Public speaking, 70.

Pupil activities, general discus-

sion, 44–62; literature, 94–96; social studies, 126–28; science, 143–45; mathematics, 163–64; physical training, 175–76; English language, 253–55; modern languages, 265–66.
Purposes of education. *See* Objectives.

Quantitative thought, 146–55.

Reading, language objectives, 12; leisure occupations, 19; fundamental experiences, 53–56; in general education, 69; literature, 76–96; in history, 115; in science, 135–36, 139, 142; in health education, 174–75; art, 228; modern language, 261–65; Latin, 267–68, 275–78.
Religious Attitudes, 25–26, 92–93, 105–06, 143.

Sanitation. *See* Physical training.
School Board, 282, 284–85.
School finance, 147.
Science, in general program, 69; functions, 129–34; pupil activities, 134–36, 143–45; guiding principles, 136–41; objectives, 141–43; as related to practical arts, 205, 216.
Scientific method in curriculum-making, 4–5, 9, 33–35.
Self-direction of pupil activities, 85, 139, 171–73, 204, 217, 262, 277.
Sewing, 193–94, 214.
Shop-work. *See* Practical arts of men.
Short-unit courses, 199–200, 203–04, 217, 227.
Social Intercommunication, objectives, 8, 11–12.
Social studies, in general education, 69; objectives, 97–106; guiding principles, 106–26; pupil activities, 126–30.
Spare-time activities. *See* Leisure occupations.
Specialization, 29, 66, 72–75, 87, 116, 177–84, 228, 236, 264, 276.
Specialized education. *See* Vocational education.
Spelling, 12, 33, 241, 243, 248, 252, 254.
Subjects, the objectives, 43; of general education, 69–70.
Superintendent, 281, 284–86.
Survey, general, 1–2, 5, 8–9; specific, *see* Activity-analysis.
Swimming, 13, 36, 104.

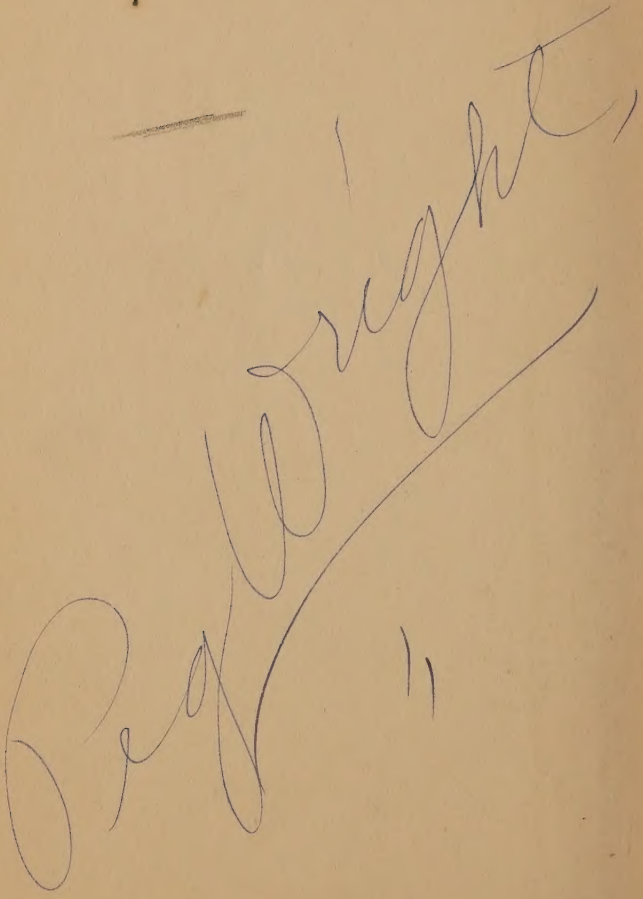
Teachers, 280, 285–86.
Thought, relation to language, 53, 238–40, 246–47, 257, 267.
Travel, 192–93, 208, 214.
Trigonometry, 67, 157, 159–61.
Type-writing, 70.

Ultimate objectives, 30, 43.
Unanalyzed objectives, 32–33.
Units of training, 72–75.
Unspecialized practical activities in general education, 69; in physical maintenance, 166, 172; the problem, 177–80; values, 180–85; list of specific activities, 186–98; for men, 199–208; for women, 209–18.

Vicarious participation, 19, 77, 82, 108–10, 117.
Visual art. *See* Art.
Vocabulary, 240, 250, 252, 269–72, 275, 278.
Vocational education, objectives, 29, 43; distinguished from general education, 66–67; on the

program, 68–75; in literature, 87; related science, 140–41; related mathematics, 160; related art, 228; in music, 236; related modern languages, 264; Latin, 272.

Vocational guidance, 59–60.

Work-level. *See* Functional education.

Zoölogy, 21, 136, 142.